ENVIRONMENTAL PROTECTION AGENCY

[OPP-30000/28F; PH-FRL 2630-4]

Creosote, Pentachlorophenol, and Inorganic Arsenicals; Intent to Cancel Registrations of Pesticide Products Containing Creosote, Pentachlorophenol (Including Its Salts) and the Inorganic Arsenicals; Determination Concluding the Rebuttable Presumption Against Registration of the Wood Preservative Uses of Pesticide Products; Availability of Position Document

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Intent to Cancel. Notice of Determination; Notice of Availability of Position Document.

SUMMARY: In October 1978, EPA initiated an administrative review process to consider whether the pesticide registrations for the wood preservative uses of creosote, pentachlorophenol (including its salts), and the inorganic arsenicals should be cancelled or modified. This Notice concludes that process and announces that certain changes in the terms and conditions of registration are required if registrants and applicants wish to avoid cancellation.

DATE: Requests for a hearing by a registrant, applicant, or other adversely affected parties must be received on or before August 13, 1984, or, for a registrant or applicant within 30 days from their receipt by mail of this Notice, whichever date is the later applicable deadline.

ADDRESS: Requests for a hearing must be submitted to: Hearing Clerk (A-110), Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT:

By mail: Carol Langley, Special Review Branch, Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

Office location and telephone number: Rm. 711, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA. (703-557-7401).

SUPPLEMENTARY INFORMATION:

I. Introduction

The Environmental Protection Agency issued notices of rebuttable presumption against registration (RPAR) for the wood preservative uses of pesticide products containing coal tar, creosote and coal tar neutral oil (these three products are hereinafter referred to as "creosote"), inorganic arsenicals, and pentachlorophenol, including its derivatives, which were published in the Federal Register of October 18, 1978 (43 FR 48154, 48267, and 48443, respectively). For creosote, the RPAR was issued on the bases of oncogenicity and mutagenicity. The Agency's bases for the issuance of an RPAR for the inorganic aresenical pesticides were oncogenicity, mutagenicity, and reproductive or fetotoxic effects. For pentachlorophenol, the RPAR was issued on the bases of teratogenicity and fetotoxicity. The Agency issued a preliminary notice of determination concluding the RPAR for the wood preservative uses of creosote, the inorganic arsenicals and pentachlorophenol (including its salts) (hereinafter referred to as the wood preservative chemicals), which was published in the Federal Register of February 19, 1981 (46 FR 13020). In the preliminary notice and the supporting Position Document (PD 2/3), the Agency set forth its determination that the wood preservative chemicals continue to exceed the risk criteria which provided the bases for the RPARs. In addition, the Agency determined that the ues of pentachlorophenol poses the risk of oncogenicity because of the presence of the contaminants hexachlorodibenzo-p-dioxin (HxCDD) and hexacholorobenzene (HCB), both of which have the potential to produce teratogenic/fetotoxic effects. To reduce the risks attributable to the use of the wood preservative chemicals, the Agency proposed certain modifications to the terms and conditions of registration, including the classification of certain uses for restricted use, cancelling the registrations of spray pentachlorophenol products with concentrations of pentachlorophenol of less than 5 percent, protective clothing and equipment requirements, prohibitions against eating, drinking and smoking while applying wood preservative chemicals, requirements for proper care and disposal of work clothing and equipment, the requirement for a closed mixing and a closed emptying system for prilled (granular) formulations of pentachlorophenol, powder and prilled formulations of sodium pentachlorophenate and the powder formulations of the inorganic arsenicals, the prohibition against indoor application, the prohibition against applying the wood preservatives to wood intended for interior use with a few exceptions, the prohibition against applying the wood preservative pesticides in a manner which may result in direct exposure to domestic animals or livestock, or in the contamination of food, feed or drinking and irrigation water, and the requirement for control technologies to reduce arsenic surface residues on the treated wood. In light of the very high economic benefits resulting from the use of the wood preservative chemicals, the Agency determined that the use of the wood preservative chemicals in accordance with these modifications would be expected to satisfy the statutory standard for registration.

In addition, the Agency recommended that action should be taken to propose regulatory measures for the use of the treated wood under the authority of the Toxic Substances Control Act (TSCA). The focus of this recommendation was a projected rule requiring that labeling providing use, handling, and disposal precautions to users accompany the treated wood products. Among the proposed label recommendations were advising the use of gloves when handling treated wood, the use of a dust mask and coveralls when sawing treated wood, and advising against interior uses of treated wood (with certain enumerated exceptions), against uses which may result in direct exposure to livestock or the contamination of food, feed, or water, and against the burning of treated wood.

The Agency's preliminary determinations were submitted to the FIFRA Scientific Advisory Panel (SAP) and the U.S. Department of Agriculture (USDA) for review pursuant to sections 6(b) and 25(d) of FIFRA. Comments were also solicited from the registrants and any other interested persons. After reviewing the comments which were received from the SAP, the USDA, the registrants and other interested persons, the Agency made certain modifications to the proposed decision announced in the Preliminary Notice of Determination. The Agency held a public meeting on April 14, 1983, notice of which was published in the Federal Register of March 30, 1983 (48 FR 13257), to give interested persons the opportunity to comment on the proposed changes to the decision. The comments which were received by the Agency were carefully considered in the development of this final determination, and certain changes were made in the final decision based on the comments. The comments received by the Agency in response to the PD 2/3 and the public meeting, and changes made in the final decision based on those comments are discussed in detail in the supporting Position Document (PD 4).

The modifications which were made to the proposed decision announced in the Preliminary Notice of Determination include: (1) Minor changes in the label

language for clarification: (2) requiring respirators for workers in arsenic treatment plants when the arsenic ambient air levels exceed 10 μg/m³, or are unknown, rather than requiring the use of dust masks at all times; (3) elimination of the proposed requirement for a respirator for inorganic arsenical applicators entering treatment cylinder doors except when the ambient air level exceeds 10 μg/m³ (averaged over an 8-hour workday) or is unknown; (4) requiring adherence to industry standards that processes used to apply inorganic arsenical formulations shall leave no visible surface deposits on the wood instead of requiring the implementation of specified control technologies; (5) allowing the unrestricted use of arsenical brush-on products for commercial construction use only, rather than restricting the use of these products to certified applicators; (6) requiring a 3-year phase-in period for the use of closed emptying/mixing systems for prilled and flaked formulations of pentachlorophenol and powered formulations of sodium pentachlorophenate and in the interim allowing either protective clothing and a respirator or the use of closed systems; (7) requiring that the stationary spray apparatus used in the spray method of application for pentachlorophenol and sodium pentachlorophenate be operated to minimize overspray and be free of leaks instead of requiring a respirator for applicators; and requiring that where there is a visible mist an applicator in the vicinity of the apparatus must wear a respirator and protective clothing; (8) the addition of certain protective clothing requirements to the labeling for the spray application of creosote and pentachlorophenol products; (9) requiring a teratogenicity label warning for all products containing pentachlorophenol and sodium pentachlorophenate; (10) requiring a 15 ppm upper limit for hexachlorodibenzo-p-dioxin (HxCDD) in all penthachlorophenol and sodium pentachlorophenate technical products with a reduction to 1 ppm within 18 months; (11) requiring that pentachlorophenol products in concentrations of 5 percent or less may only be used by certified applicators, and allowing the spray method of application for these products; (12) requiring that wood treaters who pressure treat wood with creosote, pentachlorophenol and inorganic arsenicals participate in a mandatory consumer awareness program designed to inform users of treated wood of proper use and handling precautions.

This Notice initiates actions to cancel or deny registrations for all uses of the wood preservative chemicals unless the terms and conditions of registration are modified in accordance with the requirements set forth in this Notice. The workers protection requirements specified in this document are established pursuant to FIFRA, which provides no means of regulating occupational safety and health hazards except insofar as they are directly associated with the use of a registered pesticide. EPA has made no attempt to regulate any workplace hazard except those associated with the use of pesticide products containing creosote, pentachlorophenol (and its salts) and the inorganic arsenicals as wood preservatives. EPA in developing these worker protection requirements has only considered the hazards directly attributed to the use of these pesticides.

This Notice is organized into seven units. Unit I is this introduction. Unit II, entitled "Legal Background", provides a general discussion of the regulatory framework within which this action is taken. Unit III sets forth a summary of the bases for the regulatory actions which the Agency is implementing concerning the wood preservative chemicals. Unit IV sets forth the regulatory actions required by this Notice. Unit V discusses the Consumer Awareness Program designed to inform users of treated wood of certain precautions which should be taken when handling treated wood and wood products. Unit VI contains the comments of the Scientific Advisory Panel, the Secretary of Agriculture and the Agency's response to those comments. Finally, Unit VII, entitled "Procedural Matters", provides a brief discussion of the procedures which will be followed in implementing the regulatory actions which the Agency is announcing in this Notice.

The PD 2/3 and the Wood Preservatives Position Document 4 (PD 4) provide the detailed technical data and information to support the regulatory actions announced in this Notice. The Wood Preservatives PD 4 also sets forth in detail the Agency's analysis of comments submitted by the Secretary of Agriculture, the FIFRA Scientific Advisory Panel, the registrants, and other interested parties regarding the regulatory actions announced in the Preliminary Notice.

II. Legal Background

In order to obtain a registration for a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act as amended ("FIFRA"), an applicant for registration must demonstrate that the pesticide satisfies the statutory standard for registration. That standard requires, among other things, that the pesticide perform its intended function without causing "unreasonable adverse effects on the environment." FIFRA section 3(c)(5), the term "unreasonable adverse effects on the environment" is defined as "any unreasonable risk to man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide". FIFRA section 2(bb). This standard requires a finding that the benefits of each use of the pesticide exceed the risks of use, when the pesticide is used in compliance with the terms and conditions of registration or in accordance with commonly recognized practice.

The burden of proving that a pesticide satisfies the registration standard is on the proponents of registration and continues as long as the registration remains in effect. Under section 6 of FIFRA, the Administrator may cancel the registration of a pesticide or require modification of the terms and conditions of registration whenever it is determined that the pesticide causes unreasonable adverse effects on the environment. The Agency created the RPAR process to facilitate the identification of pesticide uses which may not satisfy the statutory standard for registration and to provide an informal procedure to gather and evaluate information about the risks and benefits of these uses.

The regulations governing the RPAR process provide that a rebuttable presumption shall arise if a pesticide meets or exceeds risk criteria set out in the regulations. 40 CFR 162.11. The Agency announces that an RPAR has arisen by issuing a notice for publication in the Federal Register. Registrants and other interested persons are invited to review the data upon which the review is based and to submit data and information to rebut the presumption by showing that the Agency's initial determination of risk was in error, or by showing that use of the pesticide is not likely to result in any significant risk to humans or the environment. In addition to submitting evidence to rebut the risk presumption, commenters may submit evidence as to whether the economic, social and environmental benefits of the use of the pesticide outweigh the risks of use. Unless all presumptions of risk are rebutted, the RPAR is concluded by issuance of a Notice of Intent to Cancel.

In determining whether the use of a pesticide poses risks which are greater than the benefits, the Agency considers possible changes to the terms and

conditions of registration which can reduce risks, and the impacts of such modifications on the benefits of use. If the Agency determines that such changes reduce risks to the level where the benefits outweigh the risks, it may require that such changes be made in the terms and conditions of the registrations. Alternatively, the Agency may determine that no change in the terms and conditions of a registration will adequately assure that use of the pesticide will not pose an unreasonable adverse effect. In either case, the Agency will issue a Notice of Intent to Cancel the registration. Actual cancellation may be avoided by making the specified corrections set forth in the Notice, if possible. Adversely affected persons may also request a hearing on the cancellation of a specified registration and use, and, if they do so in a legally effective manner, that registration and use will be maintained pending a decision at the close of an administrative hearing.

III. Summary of Determination of Risks and Benefits

The Agency has considered information regarding the risks of use of the wood preservative chemicals as well as the economic and other benefits associated with the use of these chemicals. Detailed information on the risk and benefit information considered by the Agency is found in the PD 2/3 and the PD 4. These documents fully set forth the Agency's reasons for concluding the RPAR on the wood preservative chemicals. Copies of the PD 4 are available upon request at the address given previously in this Notice. Copies of the PD 2/3 (NTIS No. PB82-229956) are available for $61 from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, (703-487-4650).

A. Determination on Risk

The creosote RPAR was based on information indicating that creosote posed the risks of oncogenicity and mutagenicity to humans. The bases for the issuance of the RPAR for the inorganic arsenicals were oncogenic, mutagenic, teratogenic, and fetotoxic or reproductive effects. For pentachlorophenol, the risks of concern were teratogenicity and fetotoxicity, as well as the risk of oncogenicity because of the presence of the contaminants HxCDD and HCB, which are formed during the manufacturing process of technical pentachlorophenol. The oncogenic risks estimated for pentachlorophenol and sodium pentachlorophenate in the PD 2/3 were based on the HxCDD contaminant alone because the HCB-related risk had a negligible effect on the total oncogenic risk. HxCDD and HCB also have the potential to produce teratogenic and fetotoxic effects.

The Agency has reevaluated the available data and has concluded that while the presumption of teratogenicity has not been rebutted, the teratogenic potential of the inorganic arsenicals cannot be quantified until an adequate study is performed. Otherwise, the Agency's conclusions regarding the risks posed by the wood preservative chemicals remain intact. Detailed information about these risks concerns is found in the PD 2/3 and the PD 4.

New exposure information received in response to the PD 2/3 altered the risk estimates for certain uses of the wood preservative chemicals. In addition, the risks estimates for oncogenicity for pentachlorophenol and sodium pentachlorophenate presented in the Position Document vary somewhat from the risk numbers given in the PD 2/3 because the Agency has refined its oncogenic risk assessment method and has used the multi-stage models rather than the one-hit method. The model used for estimating the risks due to dermal/oral and inhalation exposure to the inorganic arsenicals have also been modified. However, absent any changes in exposure, the estimated oncogenic risks derived by these revised methodologies are of the same order of magnitude as the PD 2/3 estimates. Changes in exposure estimates, however, also resulted in modifications in the risks estimates for certain uses of the wood preservative chemicals. The risks of use for all use situations for the three wood preservative chemicals were of sufficient magnitude to require the Agency to determine whether the uses of the wood preservative pesticides offered offsetting social, ecomonic or environmental benefits. The detailed risk estimates for pentachlorophenol and the inorganic arsenicals are fully presented in the PD 4 and are summarized in the following tables, which relate primarily to occupational exposure situations. The creosote risks have not been quantified because the Agency has inadequate information regarding inhalation exposure to all of the specific oncogenic or mutagenic components of creosote.

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TABLE 1 - RISK ASSESSMENT FOR PENTACHLOROPHENOL

Exposure Situation	Risk 1/ Without Protective Measures HxCDD(15ppm) (onco)	Penta MOS	Risk with Required 2/ Protective Measures HxCDD(1ppm) (onco)	Penta MOS
1. Pressure treatment plants - pentachlorophenol				
a. Opening cylinder doors 3/	10^{-4}	150	10^{-6}	1500
b. Entering cylinders 4/	Not determined	Not determined	Reduce total dermal exposure by 80% and inhalation exposure by 90%.	
c. Bag emptying 5/	10^{-3} to 10^{-2}	43 to 23	Assume minimal exposure and risk (for closed emptying mixed systems).	
			10^{-4} to 10^{-5} (protective clothing/ respirator)	400 to 160
2. Non-pressure treatment uses - pentachlorophenol				
a. Poles/ groundline	Not determined	Not determined	Reduce total dermal exposure 80%.	
b. Millwork/ plywood				
(I) Dip/flow (5.0%)	10^{-1}	1.2	10^{-4} 6/	12 6/
(II) Spray (2.5%)	10^{-2} 6/	2.4 6/	10^{-4} 7/	23 6/
	10^{-2} 7/	2.3 7/	10^{-4} 7/	23 7/

Exposure Situation	Risk 1/ Without Protective Measures HxCDD(15ppm) (onco)	Penta MOS	Risk with Required 2/ Protective Measures HxCDD(1ppm) (onco)	Penta MOS
c. Sapotain (Sodium pentachlorophenate)				
(I) Dip/flow (5%) 8/	10^{-2}	60	10^{-4}	600
(II) Sapotain Spray (0.5% solution)	10^{-2} 9/	440 9/	10^{-5} 9/	1300 9/
	10^{-2} 7/	200 7/	10^{-5} 7/	2000 7/
d. Home and Farm 10/				
(I) Brush-on				
Indoor application	10^{-3}	1.2	No risk (prohibit indoor application).	
Outdoor application	10^{-3}	1.2	10^{-5} 11/	12 11/
(II) Spray application	Not determined	Not determined	Reduce total dermal exposure 80% and inhalation exposure 90%.	
3. Interior Use of treated wood - pentachlorophenol				
a. Occupational end-use. Poorly ventilated	Negligible	4300 to 1000	Negligible	7500 to >10,000
	(Acute toxicity)		(Reduce acute toxicity 80%)	

Exposure Situation	Risk Without Protective Measures [1/] HxCDD(1ppm) (once)	Penta MOS	Risk with Required Protective Measures [2] HxCDD(1ppm) (once)	Penta MOS
b. Occupational end-use. Well ventilated.	Negligible [Acute toxicity]	7900	Negligible [Reduce acute toxicity 80%]	>10,000
c. Residential end-use of commercial dip/pressure treated wood	Negligible [Acute toxicity]	940 to 4000	Negligible [Reduce acute toxicity 80%.]	6300 to >10,000 or no risk [12/]
d. Residential end-use of aged treated wood	Negligible [Acute toxicity]	1900 to 38,000	Negligible [Reduce acute toxicity 80%.]	>10,000

1/ The PDA risks for HxCDD were based on a dermal absorption rate of 50%. The multi-stage oncogenic risk model was used for the PDA risk estimates. Oncogenic risks are the estimated increased possibility of cancer resulting from a lifetime of exposure. MOS (Margins of Safety - ratio between the level to which a person is exposed and the level at which no effects are observed in laboratory animals) estimates for teratogenic/fetotoxic risks are rounded off to two significant figures and assume a 50% dermal absorption rate for liquid pentachlorophenol and 1% for dry formulations.

2/ This table includes all risk reduction measures required by this Notice including the reduction of the dioxin level to 1 ppm.

3/ Dermal exposure not determined.

4/ The information for applicators entering cylinders also applies to millwork and plywood applicators who enter, clean, or repair vats or other related equipment that is contaminated with the treatment solution.

5/ The risks were calculated based on the assumption that an applicator empties/mixes the prilled/flaked formulation a maximum of 2 hrs/day for 2 days/week. The risk estimates also apply to applicators engaging in bag emptying/mixing activities for millwork and plywood application and for bag emptying/mixing powdered sodium pentachlorophenate for sapstain control.

6/ Assuming the applicator is 30 to 40 feet away from the enclosed spray apparatus, is only exposed to pentachlorophenol vapors, not HxCDD, but is exposed dermally (hand contact) with the treatment solutions.

7/ Assuming the applicator is in the vicinity of the enclosed spray apparatus and is exposed to both HxCDD and pentachlorophenol or sodium pentachlorophenate (dermal and inhalation).

8/ Assuming a 5% solution of sodium pentachlorophenate, a 50% dermal absorption rate for HxCDD and a 1% dermal absorption rate for sodium pentachlorophenate in an aqueous solution.

9/ Assuming the applicator is 30 to 40 feet away from the enclosed spray apparatus, is only exposed to pentachlorophenate vapors (not HxCDD), but is exposed dermally (hand contact) to the treatment solutions. The Agency assumed that an applicator may spill 6.0 mls of a 5% sodium pentachlorophenate solution on the hands.

10/ The PDA oncogenicity risks for brush-on home and farm applications were calculated based on the assumption that an applicator applies the formulation once every three years for two weeks duration. The Agency also assumed that an applicator may spill 6.0 mls of a 5% pentachlorophenol solution on the hands.

11/ Application allowed outdoors, using gloves. Respirators required during application if inhalation of vapors cannot be avoided.

12/ Prohibition of non-pressure application of pentachlorophenol to logs intended for use in the construction of log homes.

TABLE 2 - RISK ASSESSMENT FOR INORGANIC ARSENICALS

Exposure Situation	Risk Without Protective Measures (once) 1/	Risk with Required Protective Measures (once) 1/
1. Pressure treatment plant - inorganic arsenicals		
a. Exposure to ambient arsenic	10^{-3} 2/	10^{-5} 3/
b. Opening cylinder doors	Not determined	Reduce dermal exposure by 90%.
c. Entering cylinder	Dermal risk not determined 10^{-3} 2/	Reduce total dermal exposure by 80%. 10^{-5} 3/
d. Handling freshly treated wood and mixing dilute formulations	10^{-2} (d) 10^{-3} (i) 4/	10^{-2} (d) 10^{-5} (i) 4/
e. Bag emptying	10^{-2} (d) 10^{-3} (i) 4/	Minimal risk (closed systems)
2. Brush-on applications - inorganic arsenicals	10^{-3} (d)	10^{-4} (d)
3. Interior uses of wood pressure-treated with inorganic arsenicals	10^{-5} (i) 7/	10^{-6} (i) 6/
4. Sawing/ fabricating wood pressure-treated with inorganic 5/ arsenicals	10^{-4} CCA (g) 10^{-3} ACA (g) 10^{-3} CCA (i) 10^{-3} ACA (i)	10^{-4} CCA (g) 10^{-4} ACA (g) 10^{-4} CCA (i) 10^{-4} ACA (i)

(d) - dermal exposure

(i) - inhalation exposure

(g) - gastrointestinal exposure

1/ Data were inadequate to allow calculation of a MOEL for teratogenic/fetotoxic effects for inorganic arsenic; thus, MOS risks were not estimated. The inhalation risks for inorganic arsenic were calculated using a linear dose response model based on epidemiological data. The dermal/oral risks for inorganic arsenic were calculated using a linear dose response model based on epidemiological data.

2/ Inhalation risks based on an assumed exposure of 10 ug/m^3 inorganic arsenic levels in the air, averaged over an 8-hour workday.

3/ Require respirators if the arsenic level is unknown or exceeds 10 ug/m^3 averaged over an 8-hour work day.

4/ Inhalation risks based on an assumed exposure of 10 ug/m^3 arsenic in ambient air.

5/ Risks based on inhalation and gastrointestinal exposure, assuming negligible exposure from dermal contact with arsenic treated wood.

6/ Risks based on allowing arsenic treated wood in interiors if surfaces are vacuumed (Koppers, Nov. 15, 1983 study).

7/ Based on 1977 National Bureau of Standards study discussed in PD 2/3 and PD 4.

B. Determination of Benefits

A detailed analysis of the economic benefits of the use of the wood preservatives is presented in PD 2/3 and is summarized in the Preliminary Notice of Determination (46 FR 13024), as well as in the PD 4. The Agency has not received any new information which alters this analysis. As discussed in the Preliminary Notice and the PD 4, the application of wood preservative chemicals protects wood from attack by fungi, insects, bacteria, or marine borers. An increase in life expectancy of five or more times that of untreated wood is achieved for most treated wood products, and for most uses this results in extremely high economic benefits.

The uses for pressure treated wood which were considered in the benefits analysis include: (1) Railroad ties, (2) lumber, timber and plywood, (3) pilings, (4) posts, (5) crossarms, and (6) poles. Non-pressure uses which were evaluated include (1) poles-groundline, (2) home and farm, (3) sapstain control, (4) millwork and plywood, and (5) particleboard. The economic impacts for each use were derived by evaluating the cancellation scenarios of each wood preservative in terms of the cost of substitution of remaining registered wood preservatives or alternative materials. A brief summary of the projected economic impacts for each use is provided below:

1. *Railroad ties.* In 1978, about 103.5 million cubic feet of wooden railroad crossties and switchties were treated with wood preservatives for use in the railroad tie system in the United States. Approximately 99.6 percent of these ties were treated with creosote. Cancellation of creosote for this use would result in an estimated annualized cost increase ranging from 40.5 million to 2.4 billion dollars.

2. *Lumber, timber and plywood.* An estimated 105.3 million feet of lumber and timber were treated with the three wood preservatives in 1978. More than 70 percent of this lumber and timber (about 73.32 million cubic feet) was treated with inorganic arsenicals, and about 20 percent (21.21 million cubic feet) was treated with pentachlorophenol. Creosote was used for treating the remaining 10 percent (10.78 million cubic feet). The economic impact of the cancellation of creosote was estimated at an annual cost increase of $39 million. For the cancellation of pentachlorophenol, the annual cost increase would fall in the $18 million range. Dollar impacts are not strictly proportional to the volume of wood treated. Factors include costs of alternative chemicals, service life associated with the alternatives and necessary capital investment. If the inorganic arsenicals and creosote were cancelled, there would be major cost impacts since pentachlorophenol is not an acceptable substitute for most uses of lumber, timber and plywood. The cancellation of all three wood preservatives for this use would result in the substitution of higher cost non-wood materials. Due to the diversity of end uses for lumber, timber and plywood, the projected economic impact cannot be fully evaluated.

3. *Pilings.* An estimated 12.09 million cubic feet of pilings were treated with wood preservatives in 1978 for use as marine and foundation pilings. Creosote was used to treat 82.7 percent of these pilings in 1978, while pentachlorophenol was the wood preservative for 9.5 percent of the pilings and the inorganic arsenicals were used for 7.8 percent. The annual cost impact of the cancellation of creosote would be a $9 to 10 million cost increase; if pentachlorophenol were cancelled, a $8.3 to 9 million annual cost increase would result.

4. *Posts.* In 1978, an estimated 20 million cubic feet of posts were treated with preservatives. The average service life of untreated fence posts is only 3.3 years, compared with 38 years for creosote or inorganic arsenical-treated posts (ACA) and 33 years for posts treated with pentachlorophenol. In 1978, 22.9 percent of treated fenceposts were treated with creosote, 54.8 percent with pentachlorophenol, and 22.3 percent with the inorganic arsenicals. If pentachlorophenol were cancelled, there would be an annual increase in the cost of treated wood posts of $9.75 million to $5.1 million. The cancellation of creosote would result in an annual cost increase of $3.3 million; for the inorganic arsenicals, the annual cost increase resulting from cancellation would be $4.0 million to $4.5 million.

5. *Crossarms.* An estimated 1.69 million cubic feet of crossarms (the cross members of assembled utility poles) were treated with wood preservatives in 1978. Two and a half percent were treated with creosote, 95.8 percent with pentachlorophenol and 1.7 percent with the inorganic arsenicals. The 1978 cost of treated crossarms was estimated as $14.86 million. The service lives of crossarms treated with the three major wood preservatives are approximately 40 years. If only one of the wood preservative chemicals were cancelled for the crossarm use, the economic impact would range from minor to moderate since the remaining preservatives could be substituted for this use. However, if all three wood preservatives were cancelled for this use, and steel crossarms were used as a substitute, there would be major adverse economic consequences.

6. *Poles.* Treated poles are the principal structural support elements in the 4.52 million miles of the electric distribution system and the estimated 640,000 miles of electrical transmission lines in the United States. Treated poles are also used to support telephone lines, as light standards, and for construction uses in residential and other buildings. In 1978, an estimated 64.2 million cubic feet of wood were treated for pole use (2.86 million treated poles). The distribution of the three preservatives for pole treatment by volume in 1978 was 65.3 percent for pentachlorophenol, 28.4 percent for creosote and 6.3 percent for the inorganic arsenicals. If any one or two of the wood preservative chemicals were cancelled for this use, the annual cost increase could be as high as $32.8 million dollars. If all three wood preservatives were cancelled for the pole use, the most likely substitutes would be concrete and steel. The use of these materials would result in an annual cost increase ranging from $1.3 billion to $2.1 billion.

7. *Poles-groundline.* In groundline treatment of poles (poles-groundline), wood preservatives are applied to a previously installed pressure-treated pole over a section both above and below the ground level of the pole. This treatment can delay decay and subsequent pole failure for 20 years or more. The two major formulations of commercial poles-groundline treatments marketed in the United States contain both creosote and pentachlorophenol. If both creosote and pentachlorophenol were cancelled for the poles-groundline use, the resultant average annual cost increase could range from $36.8 million to $70 million.

8. *Home and farm.* Pentachlorophenol and creosote solutions are applied by homeowners, farmers, and, to some extent, by carpenters, by brushing, rolling, dipping, soaking or spraying the wood. About 1.6 million pounds of pentachlorophenol and 2.0 million pounds of creosote are used around homes and farms to protect various wood structures and products exposed to natural elements. If either pentachlorophenol or creosote were cancelled for home and farm use, however, would eliminate the products with the widest range of control.

9. *Sapstain control.* Sodium and potassium pentachlorophenate are currently the primary antimicrobials used to control sapstaining and surface staining fungi in the United States.

submission must be conducted in accordance with the instructions on the attached labeling material.

Note to User: Examples of acceptable materials for protective clothing (e.g., gloves. overalls. jackets. and boots) required during application and handling of inorganic arsenicals are vinyl. polyvinyl chloride (PVC). neoprene. NBR (Buna-N). rubber. and polyethylene.

3. *For all products labeled for pressure treatment of wood and containing inorganic arsenicals. the following language must be attached as labeling:*

a. *Implementation of the permissible exposure limit (PEL) monitoring program*—(1) *Implementation.*

Each arsenical wood treatment plant employer shall require all employees potentially exposed to airborne inorganic arsenic to wear properly fitting. well maintained high efficiency filter respirators MSHA/NIOSH-approved for inorganic arsenic for the entire period that the employees are in the treatment application work area or engaged in any activity associated with the treatment process. Alternatively. to potentially relieve employees from the burden of wearing respirators. the employer may implement a Permissible Exposure Limit (PEL) monitoring program.

All wood treatment plant employers who elect to implement the PEL monitoring program must determine the current levels of airborne arsenic. average over an 8-hour period. to which their employees are exposed. Monitoring data obtained one year prior to this implementation date may be used to determine the initial levels of airborne exposure to employees. if the data were obtained in the same manner as described below in the "Monitoring and Measurements Procedures" unit. and if the employer can certify that no changes have been made since the time of monitoring that could have resulted in new or additional employee exposure to inorganic arsenic including events on the "PEL Checklist" below.

If the initial or subsequent monitoring demonstrates that airborne inorganic arsenic in a work area is greater than 10 $\mu g/m^3$. all employees working in that area are required to wear properly fitting. well-maintained high efficiency filter respirators MSHA/NIOSH-approved for inorganic arsenic. If in subsequent monitoring. at least two consecutive measurements taken at least 7 days apart. the inorganic arsenic levels are below 10 $\mu g/m^3$. employees in those areas may discontinue the wearing of the respirators. except as discussed in the "PEL Checklist" below. However. if the employee exposure is above 5 $\mu g/m^3$ and below 10 $\mu g/m^3$. the employer shall repeat monitoring at least every 6 months until at least two consecutive measurements. taken at least seven days apart. are below 5 $\mu g/m^3$. The employer may then discontinue monitoring. except as discussed in the "PEL Checklist" below.

If the monitoring reveals employees are exposed to airborne arsenic levels below 5 $\mu g/m^3$. monitoring need not be repeated. except as discussed in the "PEL Checklist" below.

PEL Checklist. In all cases where there has been a change in production. process. control. or employee handling procedures. or if any events in the PEL Checklist occurred. or if. for any other reason an employer should suspect new or additional airborne inorganic arsenic. additional monitoring that complies with the requirements for initial monitoring shall be completed. Responses to the Checklist will become part of the monitoring records. Monitoring is required within 2 months if any of the following events/questions on the check list can be answered in the affirmative with respect to any events which may have occurred since the last monitoring report submitted to the Agency:

1. After the wood has been treated. have you changed from hand stacking to mechanical stacking or from mechanical stacking to hand stacking? If yes. when?

2. Has your production capacity increased significantly? If yes. when?

3. Have you changed from a ready-to-use or dilute concentrate to a mix-it-yourself formulation? Have the proportional amount of arsenic in the solution increased. e.g., have you shifted from CCA type A or C to type B? If yes. when?

4. Has a significant (i.e., reportable under the "Comprehensive Environmental Response. Compensation. and Liability Act of 1980" (Superfund). 42 U.S.C. 9601 *et seq.*, spill occurred? If yes. when?

5. Is treated wood being retained on the drip pad for less time? If yes. when?

6. Have there been any other production. process. control or employee handling procedure changes which could result in new or additional airborne inorganic arsenic? Identify change. and when it occurred.

Monitoring and Measurement Procedures. The employer shall collect personal air samples. including at least one sample which is adequate to represent typical conditions for a full work shift (at least 7 hours) for each job classification in each work area. Sampling should be done using a personal sampling pump calibrated at a flow rate of 2 liters per minute. Samples should be collected on 0.8 micrometer pore size membrance filter (37 mm diameter). The method of sampling analysis should have an accuracy of not less than ±25 percent (with a confidence limit of 95 percent) for 10 micrograms per cubic meter of air (10 $\mu g/m^3$) and ±35 percent (with a confidence limit of 95 percent) for concentrations of inorganic arsenic between 5 and 10 $\mu g/m^3$.

Monitoring may be conducted through a request made to the Occupational Safety and Health Administration (OSHA) for monitoring assistance which may be provided free of charge under the terms of the OSHA consultation program as provided under section 7(c)(1) of the OSHA Act or by employees or contractors of the employer's choosing.

The Environmental Protection Agency (EPA) may direct that remonitoring take place at statistically selected establishments to assure that the Checklist is effective in identifying events which increase airborne arsenic. Selected employers will be notified by EPA/State enforcement representatives. The employer will be responsible for obtaining current air monitoring data within the time specified in the remonitoring notification and for submitting these data and reports to the EPA as described below.

Data Submission and Certification. The employer shall establish and maintain accurate records which include responses to the PEL Checklist and all monitoring reports.

The annual records or copies thereof shall be submitted to the:

U.S. Environmental Protection Agency. Office of Pesticides and Toxic Substances Compliance Monitoring Staff (EN-342). 401 M St. SW.. Washington. D.C. 20460.

All records submitted will be certified by the employer as accurate and in compliance with all calibration. analytical and sampling requirements outlined in this program. If the employer received assistance from an OSHA 7(c)(1) consultant. that consultant's report to the employer will be an acceptable record of calibration. analysis. and monitoring requiring no additional certification.

b. The following wording is required for the Consumer Information Sheet (CIS) for inorganic arsenical pressure-treated wood:

Consumer Information

This wood has been preserved by treatment with an EPA-registered pesticide containing inorganic arsenic to protect it from insect attack and decay. Wood treated with inorganic arsenic

should be used only where such protection is important.

Inorganic arsenic penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to inorganic arsenic may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use or dispose of the treated wood.

Use Site Precautions for Inorganic Arsenical Pressure-Treated Wood

Wood pressure-treated with waterborne arsenical preservatives may be used inside residences as long as all dust is vacuumed from the wood surface.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with the honey.

Treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Handling Precautions for Inorganic Arsenical Pressure-Treated Wood

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves or fireplaces because toxic chemicals may be produced as part of the smoke and ashes. Large quantities of treated wood from commercial or industrial use (e.g., construction sites) may be burned in commercial or industrial incinerators in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

When power-sawing and machining, wear goggles to protect eyes from flying particles.

Wash exposed areas thoroughly after skin contact and before eating, drinking or use of tobacco products.

If preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

4. *For all products labeled for pressure treatment of wood and containing creosote, the labels must include:*

Restricted Use Pesticide

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Individuals must wear gloves impervious to the wood treatment formulation in all situations where dermal contact with creosote is expected (e.g., handling freshly treated wood and manually opening cylinder doors).

Individuals who manually open cylinder doors must wear gloves and a respirator.

Individuals who enter pressure treatment cylinders and other related equipment that is contaminated with the wood treatment formulation (e.g., cylinders that are in operation or are not free of the treatment formulation) must wear protective clothing (including overalls, jacket, gloves and boots) impervious to the wood treatment formulation and a respirator.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation (e.g., manually opening/closing cylinder doors, moving trams out of cylinders, mixing chemicals, and handling freshly treated wood).

Wash throughly after skin contact and before eating, drinking, use of tobacco products, or using restrooms.

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Protective clothing must be changed when it shows signs of contamination. Applicators must leave protective clothing and workshoes or boots and equipment at the plant. Worn-out protective clothing and workshoes or boots must be left at the plant and disposed of in any general landfill, in the trash, or in any other manner approved for pesticide disposal.

This pesticide product may not be used for treatment of wood or wood products for sale or distribution unless the wood treater is participating in or affiliated with a program adequate to inform users of the treated wood of proper precautions to be taken in handling and using such treated wood.

At a minimum wood treaters must:

a. Distribute adequate consumer information sheets (CIS) with each shipment of pressure-treated wood so that at least one CIS will be securely attached to each bundle or batch of treated wood as it leaves the treating plant;

b. Attach at least one CIS to each invoice for sale of pressure-treated wood;

c. Make available to retailers, wholesalers and distributors an adequate supply of CIS's and signs or placards to inform consumers of the existence of the CIS's; and

d. Encourage retailers to display signs or placards informing consumers of the availability of the CIS's and to make the CIS's readily available to the consumers.

The information which EPA requires to be included in the CIS is found in the attached labeling.

Note to User: As used on this label, the term "respirators" means properly fitting, well-maintained, half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for polynuclear aromatics and organic vapors. Examples of acceptable materials for protective clothing (e.g., gloves, overalls, jackets, and boots) required during application and handling of creosote are polyvinyl acetate (PVA), polyvinyl chloride (PVC), neoprene, and NBR (Buna-N).

5. *For all products labeled for pressure-treatment of wood and containing creosote, the following language must be attached as labeling:* The following wording is required for the Consumer Information Sheets (CIS) for creosote pressure-treated wood:

Consumer Information

This wood has been preserved by pressure treatment with an EPA-registered pesticide containing creosote to protect it from insect attack and decay. Wood treated with creosote should be used only where such protection is important. Creosote penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to creosote may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use the treated wood.

Use Site Precautions for Creosote Pressure-Treated Wood

Wood treated with creosote should not be used where it will be in frequent or prolonged contact with bare skin (for

example, chairs and other outdoor furniture) unless an effective sealer has been applied.

Creosote-treated wood should not be used in residential interiors. Creosote-treated wood in interiors of industrial buildings should be used only for wood-block flooring and industrial building components which are in ground contact and are subject to decay or insect infestation, and where two coats of an appropriate sealer are applied.

Wood treated with creosote should not be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are *unlikely* to crib (bite) or lick the wood, creosote-treated wood may be used for building components which are in ground contact and are subject to decay or insect infestation if two coats of an effective sealer are applied.

Do not use creosote treated wood for farrowing or brooding facilities.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such use would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or counteriops.

Only treated wood that is visibly clean and free of surface residues should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with the honey.

Creosote-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Do not use creosote-treated wood where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

Handling Precautions for Creosote Pressure-Treated Wood

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves or fireplaces because toxic chemicals may be produced as part of the smoke and ashes. Large quantities of treated wood from commercial or industrial use (e.g., construction sites) may be burned in commercial or industrial incinerators in accordance with state and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dusk mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with creosote-treated wood; when handling the treated wood, wear tightly woven coveralls and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power-sawing and machining, wear goggles to protect eyes from flying particles.

Wash exposed areas thoroughly after skin contact, and before eating, drinking or use of tobacco products.

If oily preservative or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Coal tar pitch and coal tar pitch emulsion are effective sealers for creosote-treated wood-block flooring. Urethane, epoxy, and shellac are acceptable sealers for all creosote-treated wood.

6. *For all products labeled for pressure treatment of wood and containing pentachlorophenol, the following language must appear on the labels:*

Restricted Use Pesticide

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Applicators must wear gloves impervious to the wood treatment formulation in all situations where dermal contact is exposed (e.g., handling freshly treated wood and manually opening cylinder doors).

Individuals who manually open cylinder doors must wear gloves and a respirator.

Individuals who enter pressure treatment cylinders and other related equipment that is contaminated with wood treatment formulation (e.g., cylinders that are in operation or are not free of the treatment solution) must wear protective clothing including overalls, jacket, gloves and boots) impervious to the wood treatment formulation and a respirator.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation (e.g., manually opening/closing cylinder doors, moving trams out of cylinders, mixing chemicals, and handling freshly treated wood).

Wash thoroughly after skin contact, and before eating, drinking, use of tobacco products, or using restrooms.

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Protective clothing must be changed when it shows signs of contamination. Applicators must leave protective clothing and workshoes or boots and equipment at the plant. Worn-out clothing and workshoes or boots must be left at the treatment plant and disposed of in any general landfill, in the trash, or in any other manner approved for pesticide disposal.

Until August 31, 1987, a closed emptying and mixing system must be used or protective clothing (including respirator, gloves and tightly woven, long-sleeved cotton or disposable coveralls) must be worn when emptying and mixing prilled or flaked formulations of pentachlorophenol. After September 1, 1987, a closed system must be used when emptying and mixing prilled or flaked formulations of pentachlorophenol. A closed system is defined as any containment which prevents the release of subject chemicals into the surrounding external environment.

Note to User. As used on this label, the term "respirator" means properly fitting, well-maintained, half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for organic vapors and acid gases. Examples of acceptable materials for protective clothing (e.g., gloves, overalls, jackets, and boots) required during application and handling of pentachlorophenol are polyvinyl acetate (PVA), polyvinyl chloride (PVC), neoprene, NBR (Buna-N), and nitrile. In addition, plastic-coated disposable coveralls impervious to dust are acceptable for dust protection.

This pesticide product may not be used for treatment of wood or wood products for sale or distribution unless the wood treater is participating in or affiliated with a program adequate to inform users of the treated wood of proper precautions to be taken in handling and using such treated wood.

At a minimum wood treaters must:

a. Distribute adequate consumer information sheets (CIS) with each shipment of pressure-treated wood so

that at least one CIS will be securely attached to each bundle or batch of treated wood as it leaves the treating plant:

b. Attach at least one CIS to each invoice for sale of pressure-treated wood:

c. Make available to retailers, wholesalers and distributors an adequate supply of CIS's and signs or placards to inform consumers of the existence of the CIS's; and

d. Encourage retailers to display signs or placards informing consumers of the availability of the CIS's and to make the CIS's readily available to the consumers.

The information which EPA requires to be included in the CIS is found in the attached labeling.

7. For all products labeled for pressure treatment of wood and containing pentachlorophenol, the following language must be attached as labeling:

The following wording is required for the Consumer Information Sheets (CIS) for pentachlorophenol pressure-treated wood:

Consumer Information

This wood has been preserved by treatment with an EPA-registered pesticide containing pentachlorophenol to protect it from insect attack and decay. Wood treated with pentachlorophenol should be used only where such protection is important. Pentachlorophenol penetrates deeply into and remains in the pressure-treated wood for a long time. Exposure to pentachlorophenol may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use and dispose of the treated wood.

Use Site Precautions for Pentachlorophenol Pressure-Treated Wood

Wood treated with pentachlorophenol should not be used where it will be in frequent or prolonged contact with bare skin (for example, chairs and other outdoor furniture), unless an effective sealer has been applied.

Pentachlorophenol-treated wood should not be used in residential, industrial, or commercial interiors except for laminated beams or building components which are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied.

Wood treated with pentachlorophenol should not be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.

In interiors of farm buildings where domestic animals or livestock are *unlikely* to crib (bite) or lick the wood, pentachlorophenol-treated wood may be used for building components which are in ground contact and are subject to decay or insect infestation and where two coats of an appropriate sealer are applied.

Do not use pentachlorophenol-treated wood or farrowing or brooding facilities.

Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use treated wood for cutting-boards or countertops.

Only treated wood that is visibly clean and free of surface residue should be used for patios, decks and walkways.

Do not use treated wood for construction of those portions of beehives which may come into contact with the honey.

Pentachlorophenol-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges.

Do not use pentachlorophenol-treated wood where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

Handling Precautions for Pentachlorophenol Pressure-Treated Wood

Dispose of treated wood by ordinary trash collection or burial. Treated wood should not be burned in open fires or in stoves or fireplaces because toxic chemicals may be produced as part of the smoke and ashes. Large quantities of treated wood from commercial or industrial use (e.g., construction sites) may be burned in commercial or industrial incerators in accordance with State and Federal regulations.

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.

Avoid frequent or prolonged skin contact with pentachlorophenol-treated wood: when handling the treated wood, wear tightly woven coveralls and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated).

When power-sawing and machining, wear goggles to protect eyes from flying particles.

Wash exposed areas thoroughly after skin contact and before eating, drinking or use of tobacco products.

If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Urethane, shellac, latex epoxy enamel and varnish are acceptable sealers for pentachlorophenol-treated wood.

8. For all products labeled for groundline treatment of utility poles and containing creosote and/or pentachlorophenol, the following language must appear on the label:

Restricted Use

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Applicators must wear gloves impervious to the wood treatment formulations (e.g., polyvinyl acetate, polyvinly chloride or neoprene) in all situations where dermal contact is expected (e.g., during the actual application process and when handling freshly treated wood).

Applicators must wear disposable coveralls (e.g., nitrile or neoprene for creosote; nitrile or polythylene for pentachlorophenol) or other suitable impermeable protective clothing during the application and mixing processes and all situations where dermal contact is expected.

Protective clothing must be changed when it shows signs of contamination. Launder non-disposable protective clothing separately from other household clothing. Dispose of worn-out protective clothing and workshoes or boots in any general landfill, in the trash, or in any other manner approved for pesticide disposal.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact, and before eating, drinking, use of tobacco products, or using restrooms.

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

9. *For all products labeled as wood preservatives for home and farm use (including products for railroad tie repair) which contain creosote, the following language must appear on the label:*

Restricted Use

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Applicators must wear gloves impervious to the wood treatment formulation in all situations where dermal contact is expected (for example, during the actual application process and when handling freshly treated wood).

Spray applicators must wear protective clothing (including overalls, jackets, gloves and boots) impervious to the wood treatment formulation, and a respirator, head covering, and goggles.

Applicators who apply creosote by other application processes (e.g., brush-on) must wear disposable coveralls or other suitable impermeable protective clothing. Launder non-disposable protective clothing separately from other clothing.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact and before eating, drinking, use of tobacco products, or using restrooms.

Protective clothing must be changed when it shows signs of contamination. Dispose of worn-out protective clothing and workshoes or boots in a general landfill, in the trash or in any other manner approved for pesticide disposal.

For products for farm use or for railroad tie repair: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

For household/domestic products: Securely wrap original pesticide container in several layers of newspaper and discard in the trash. Do not reuse empty containers.

Avoid inhaling vapors. If inhalation of vapors cannot be avoided, applicators must wear a properly fitting, well-maintained half-mask canister or cartridge respirator which is MSHA/NIOSH-approved for polynuclear aromatics and organic vapors.

Do not apply where there may be direct contact with domestic animals or livestock, and where there may be contamination of food, feed, or drinking and irrigation water.

Do not apply in interiors. Do not apply to wood intended for use in interiors except for those support structures which are in contact with the soil in barns, stables, and similar sites and which are subject to decay or insect infestation. Interior surfaces of the treated wood should be sealed with two coats of an appropriate sealer.

Do not apply creosote to wood intended for farrowing or brooding facilities. Do not apply creosote to wood intended to be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood. Creosote may be used to treat wood intended to be used in interiors of farm buildings where domestic animals or livestock are *unlikely* to crib or lick the wood, if two coats of an appropriate sealer will be applied.

Do not apply to wood intended to be used in a manner in which the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use this product to treat wood intended to be used for cutting boards or counter tops.

Do not use this product to treat wood intended for construction of those portions of beehives which may come into contact with the honey.

Do not use this product to treat wood intended to be used where it may come into direct or indirect contact with public drinking water, except for those uses involving incidental contact such as docks and bridges.

Do not use this product to treat wood intended to be used where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

Wood to be treated with this product should be cut to size before treatment. If it is necessary to saw or machine wood after treatment, wear goggles to protect the eyes from flying particles and a dust mask to avoid inhaling sawdust from the treated wood. If oily preservatives or sawdust accumulate on clothes, launder before re-use. Wash work clothes separately from other household laundry.

Contact with treated surfaces should be avoided even after the preservative has dried. When handling treated wood wear tightly woven coveralls and gloves which are impervious (e.g., vinyl coated) to the pesticide. Wash exposed skin thoroughly after contact with treated wood and before eating, drinking or using tobacco products.

Wood which has been treated with this product should be disposed of by burial or ordinary trash collection. Do not burn treated wood in an outdoor fire or in stoves or fireplaces because toxic chemicals may be produced as part of the smoke and ashes.

This product should not be used to treat wood which will be in frequent or prolonged contact with skin, unless the wood will be treated with an effective sealer.

Note to User: As used on this label the term "respirators" means properly fitting, well-maintained, half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for polynuclear aromatics and organic vapors. Examples of acceptable materials for protective clothing (e.g., gloves, overalls, head covering, jackets, and boots) required during application and handling of creosote are polyvinyl acetate (PVA), polyvinyl chloride (PVC), neoprene, and NBR (Buna-N). In addition to these materials, nitrile is also acceptable for disposable coveralls. Urethane, epoxy, and shellac are acceptable sealers for all creosote-treated wood.

10. *For all products labeled as wood preservatives for home and farm use (including products for railroad tie repair) which contain pentachlorophenol, the following language must appear in the labels:*

Restricted Use

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Applicators must wear gloves impervious to the wood treatment formulation in all situations where dermal contact is expected (for example, during the actual application process and when handling freshly treated wood).

Spray applicators must wear protective clothing (including overalls, jackets, gloves and boots) impervious to the wood treatment formulation, and a respirator, head covering, and goggles when spraying.

Applicators who apply pentachlorophenol by other application methods (e.g., brush-on) must wear disposable coveralls or other suitable impermeable protective clothing. Launder non-disposable protective clothing separately from other clothing.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact and before eating, drinking, use of tobacco products, or using restrooms.

Protective clothing must be changed when it shows signs of contamination. Dispose of worn-out protective clothing and workshoes or boots in any general landfill, in the trash, or in any other manner approved for pesticide disposal.

For products for farm use or railroad tie repair: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

For household/domestic use products: Securely wrap original pesticide container in several layers of newspaper and discard in the trash. Do not reuse empty containers.

Avoid inhaling vapors. If inhalation of vapors cannot be avoided, applicators must wear a properly fitting, well-maintained half-mask cannister or cartridge respirator which is MSHA/NIOSH-approved for organic vapors and acid gases.

Do not apply where there may be direct contact with domestic animals or livestock, and where there may be contamination of food, feed, or drinking and irrigation water.

Do not apply in interiors. Do not apply to wood intended for use in interiors except for those support structures which are in contact with the soil in barns, stables, and similar sites and which are subject to decay or insect infestation; and millwork which has outdoor surfaces (e.g., doorframes, windows and patio frames). Interior surfaces of the treated wood should be sealed with two coats of an appropriate sealer.

Do not apply pentachlorophenol to wood intended for farrowing or brooding facilities. Do not apply pentachlorophenol to wood intended to be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood. Pentachlorophenol may be used to treat wood intended to be used in interiors of farm buildings where domestic animals or livestock are unlikely to crib or lick the wood, if two coats of an appropriate sealer will be applied.

Do not apply to wood intended to be used in a manner in which the preservative may become a component of food or animal feed. Examples of such sites would be structures or containers for storing silage or food.

Do not use this product to treat wood intended to be used for cutting-boards or counter tops.

Do not use this product to treat wood intended for construction of those portions of beehives which may come into contact with the honey.

Do not use this product to treat wood intended to be used where it may come into direct or indirect contact with public drinking water, except for those uses involving incidental contact such as docks and bridges.

Do not use this product to treat wood intended to be used where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.

Wood to be treated with this product should be cut to size before treatment. If it is necessary to saw or machine wood after treatment, wear goggles to protect the eyes from flying particles and a dust mask to avoid inhaling sawdust from the treated wood. If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household laundry.

Contact with treated surfaces should be avoided even after the preservative has dried. When handling treated wood wear tightly woven coveralls and gloves which are impervious (e.g., vinyl coated) to the pesticide. Wash exposed skin thoroughly after contact with treated wood, and before eating, drinking or using tobacco products.

Wood which has been treated with this product should be disposed by burial or ordinary trash collection. Do not burn treated wood in an outdoor fire or in stoves or fireplaces because toxic chemicals may be produced as part of the smoke and ashes.

This product should not be used to treat wood which will be in frequent or prolonged contact with skin, unless the wood will be treated with an effective sealer.

Note to User. As used on this label, the term "respirators" means properly fitting, well-maintained half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for organic vapors and acid gases. Examples of acceptable materials for protective clothing (e.g., overalls, jackets, head covering, boots, disposable coveralls, and gloves) required during application and handling of pentachlorophenol are polyvinyl acetate (PVA), polyvinyl chloride (PVC), neoprene, NBR (Buna-N), and nitrile. Urethane, shellac, latex epoxy enamel and varnish are acceptable sealers for pentachlorophenol-treated wood.

11. *For all products labeled as wood preservatives for brush-on treatment which contain inorganic arsenicals, the following language must appear on the labels:*

Applicators must wear gloves (e.g., rubber, vinyl or neoprene) impervious to the wood treatment solution in all situations where dermal contact is expected (e.g., during the application process and handling freshly treated wood).

Applicators must wear disposable coveralls (e.g., vinyl or polyethylene) or other similar impermeable clothing during the application process where dermal contact is expected.

Applicators must not eat, drink, or use tobacco products during these parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact, and before eating, drinking, use of tobacco products, or using restrooms.

Protective clothing must be changed when its shows obvious signs of contamination. Launder non-disposable protective clothing separately from other household clothing. Dispose of worn-out protective clothing in a manner approved for pesticide disposal and in accordance with state and federal regulations.

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannnot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

For application to the cut ends of pressure-treated wood only. Do not dilute or mix with other products.

For commercial construction use only. Not for household use.

12. *For all products labeled as wood preservatives for sapstain control and containing salts of pentachlorophenol, the following language must appear on the labels:*

For Restricted Use

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

All applicators must wear gloves impervious to the wood treatment formulation in all situations where dermal contact is expected (for example, during the application process and when handling freshly treated wood).

Until August 31, 1987, a closed emptying and mixing system must be used or protective clothing (including respirator, gloves and tightly woven.

long-sleeved cotton or disposable coveralls) must be worn when emptying and mixing powder formulations or pentachlorophenate. After September 1. 1987. a closed system must be used when emptying and mixing powder formulations of pentachlorophenate. A closed system is defined as any containment which prevents the release of subject chemicals into the surrounding external environment.

For the spray method of application: Spray apparatus must (1) be operated so as to minimize overspray (i.e.. no visible mist) and (2) be free of leaks in the system. Should there be a visible mist. spray applicators in the vicinity of the apparatus (the zone in which the mist is visible) must wear a respirator and protective clothing (including overalls. jackets. boots. head covering impervious to the wood treatment formulation and goggles).

Individuals who enter. clean. or repair vats. tanks or other related equipment that is contaminated with the treatment solution must wear a respirator. In addition. where dermal contact is expected. these individuals must wear overalls. jackets. boots. head covering impervious to the wood treatment formulation. and goggles.

Applicators must not eat. drink. or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact and before eating. drinking. use of tobacco products. or using restrooms.

Protective clothing must be changed when it shows signs of contamination. Applicators must leave all protective clothing. workshoes or boots. and equipment at the plant. Worn-out protective clothing. and workshoes or boots. must be left at the plant and disposed of in any general landfill. in the trash. or in any other manner approved for pesticide disposal.

Pesticide wastes are toxic. Improper disposal of excess pesticide. spray mixture. or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions. contact your State Pesticide or Environmental Control Agency. or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Note to User. As used on this label the term. "respirators" means properly fitting. well-maintained half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for organic vapors. Examples of acceptable materials for protective clothing (e.g.. overalls. jackets. head covering. boots. disposable coveralls. and gloves) required during application and handling of sodium pentachlorophenate are polyvinyl acetate (PVA). polyvinyl chloride (PVC). neoprene. and NBR (Buna-N). and nitrile.

13. *For all products labeled as wood preservatives for use in non-pressure treatment plants which contain pentachlorophenol. the following language must appear on the labels:*

Restricted Use

For sale to and use only by certified applicators or by persons under their direct supervision and only for those uses covered by the certified applicators' certification.

Applicators must wear gloves impervious to the wood treatment formulation in all situations where dermal contact is expected (for example. during the application process and when handling freshly treated wood).

Until August 31. 1987. a closed emptying and mixing system must be used or protective clothing (including respirator. gloves and tightly woven. long-sleeved cotton or disposable coveralls) must be worn when emptying and mixing prilled or flaked formulations of pentachlorophenol. After September 1. 1987. a closed system must be used when emptying and mixing prilled or flaked formulations of pentachlorophenol. A closed-system is defined as any containment which prevents the release of subject chemicals into the surrounding external environment.

For the spray method of application: spray apparatus must (1) be operated so as to minimize overspray (e.g.. no visible mist) and (2) be free of leaks in the system. Should there be a visible mist. spray applicators in the vicinity of the apparatus (the zone in which the mist is visible) must wear a respirator and protective clothing (including overalls. jackets. boots. head covering impervious to the wood treatment formulation. and goggles).

Individuals who enter. clean. or repair vats. tanks or other related equipment that are contaminated with the treatment solution must wear a respirator. In addition. where dermal contact is expected. these individuals must wear overalls. jackets. boots. head covering impervious to the wood treatment formulation. and goggles.

Applicators must not eat. drink. or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact. and before eating. drinking. use of tobacco products. or using restrooms.

Protective clothing must be changed when it shows signs of contamination. Applicators must leave all protective clothing. workshoes or boots. and equipment at the plant. Worn-out protective clothing. and workshoes or boots must be left at the plant and disposed of in any general landfill. in the trash. or in any other manner approved for pesticide disposal.

Pesticide wastes are toxic. Improper disposal of excess pesticide. spray mixture. or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions. contact your State Pesticide or Environmental Control Agency. or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Do not apply to logs which are intended for use in construction of log homes.

Note to User. As used on this label. the term "respirators" means properly fitting. well-maintained half-mask canister or cartridge respirators which are MSHA/NIOSH-approved for organic vapors and acid gases. Examples of acceptable materials for protective clothing (e.g.. overalls. jackets. head covering. boots. disposable coveralls. and gloves) required during application and handling of pentachlorophenol are polyvinyl acetate (PVA). polyvinyl chloride (PVC). neoprene. and NBR (Buna-N). and nitrile. In addition. plastic-coated disposable coveralls impervious to dust are acceptable for dust protection.

14. *For any other wood preservative products.* the Agency has specified no modifications which will be sufficient to avoid cancellation.

B. Other Required Changes in the Terms and Conditions of Registration

In addition to implementing the label changes specified in the preceding discussion. the Agency has also determined that all registrants of products labeled for use as wood preservatives which contain pentachlorophenol or its salts must within the time permitted by Unit VII of this Notice:

1. File an application to amend the Confidential Statements of Formula (CSF) for products containing technical pentachlorophenol or its salts to indicate that the HxCDD contamination does not exceed 15 ppm. and that 2.3.7.8-TCDD is below the limits of detection using a gas chromatography-mass spectrophotometry method acceptable to the Agency.

2. File an application to amend the Confidential Statements of Formula for products containing technical pentachlorophenol or its salts to indicate that. effective 18 months after publication of this Notice or receipt by the registrant (whichever occurs later). the HxCDD contamination does not exceed 1.0 ppm. The method used to

lower the HxCDD levels to 15.0 ppm or 1.0 ppm or lower must not increase the hexachlorobenzene or the chlorinated dibenzofuran levels above the levels in products marketed at the time of publication of this Notice.

C. Other Actions Taken by the Agency

In an action separate from this Notice, registrants will be required to submit certain data within 90 days after notification to maintain existing registrations in effect pursuant to FIFRA 3(c)(2)(B).

1. Registrants of products containing technical pentachlorophenol or its salts will be required to submit the following:

a. A description of the starting materials, manufacturing process and reaction conditions including any steps to reduce HxCDD.

b. Information on product identity relative to identification of ingredients, statement of composition and a discussion of the formation of impurities.

c. Data on the analysis and certification of product ingredients relative to preliminary analysis, certification of limits, and analytical methods for the enforcement of limits. An analytical method employing combined gas chromatography and mass spectrophotometry is acceptable.

d. HxCDD analyses every three months, the first analysis to be submitted within the stated 90-day period.

e. A description of any changes in the manufacturing process used to lower HxCDD to 15 ppm and/or 1.0 ppm or lower must also be submitted within the stated time period of 90 days. The methods used to lower HxCDD must not increase the chlorinated dibenzofurans and HCB contaminants above the levels in products marketed at the time of publication of this Notice.

f. Information on the technical feasibility and costs of reducing HxCDD contamination further than the 1.0 ppm upper limit.

2. Registrants of creosote will be required to submit the following:

a. Epidemiology study on workers at creosote treatment plants.

b. Air monitoring and dermal exposure data from creosote treatment plants.

3. Registrants of creosote and arsenic will be required to submit the following:

a. Data on permeability of glove and protective clothing materials indicating degree of protection for creosote and inorganic arenical formulations.

4. Registrants of bis (tri-n-butyltin) oxide, copper-8-quinolinolate, copper-naphthenate, acid copper chromate, chromated zinc chloride, sodium tetrachlorophenate, zinc naphthenate and 3-iodo-2-propynyl butylcarbamate and barium metaborate will be required to submit the following:

a. Chronic feeding studies.

b. Oncogenicity studies.

c. Reproduction studies.

d. Teratology studies.

5. Registrants of pentachlorophenol will be required to submit dermal and inhalation exposure data on products containing pentachlorophenol for home and farm spray application.

The details of the above requirements will be set forth in the notification letters sent to registrants pursuant to section 3(c)(2)(B) of FIFRA.

D. Existing Stocks Provisions

The following provisions issued pursuant to section 6 of FIFRA govern the existing stocks of products affected by this Notice which exist within the territorial United States. No product governed by this provision may be distributed, sold, held for sale, shipped, delivered for shipment or received and (having been so received) delivered or offered for delivery to any person except in compliance with these existing stocks provisions. Essentially, this provision will require relabeling of all pesticide products by November 1, 1984, for registrants and by February 1, 1985, for other persons. It will also allow sale, distribution and use of products containing greater than 15 ppm HxCDD until September 1, 1987, or until the existing stocks are exhausted, whichever occurs first, subject to certain restrictions. Finally, after the imposition of the 1 ppm HxCDD limit, this provision allows registrants to sell and distribute existing stocks of their products above that level for a limited time.

This existing stocks provision is divided into three subunits. The first subunit applies to all products affected by this Notice, whether or not they are also included in the coverage of any other subunit. The second subunit applies only to those wood preservatives containing pentachlorophenol which are in existence on the date of publication of this Notice in the Federal Register. The third subunit applies only to those wood preservative products containing pentachlorophenol manufactured between July 13, 1984 and the date on which a 1 ppm HxCDD limit is imposed.

1. *All wood preservative products effected by this notice.* a. Existing stocks for this subunit are defined as any product affected by this Notice which has been packaged for sale and distribution prior to the date by which the registration of the product is cancelled as a result of this Notice, or the date by which the registrant is required to submit an amendment of the registration of the product to comply with the terms and conditions of this Notice.

b. From July 13, 1984 to November 1, 1984, any existing stocks in the care, custody, or control of a registrant may be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment or received and (having been so received) delivered or offered for delivery by the registrant to any person if the product bears the labeling approved for the product at the time of publication of this Notice.

c. From July 13, 1984 to February 1, 1985, any existing stocks in the possession of a person other than the registrant of the product may be distributed, sold, offered for sale, shipped, delivered for shipment or received (and having been received) delivered or offered for delivery by a person other than the registrant of the product to any person if the product bears the labeling approved for the product at the time of publication of this Notice.

d. Except as permitted by (b) and (c) above, products affected by this Notice may only be distributed, sold, offered for sale, shipped, delivered for shipment or received (and having been so received) delivered or offered for delivery to any person if they bear or are accompanied by labeling which complies with the requirements imposed by Unit IV.A of this Notice.

e. All persons taking advantage of this subunit of the Existing Stocks Provision must also comply fully with the requirements of subunit 2 or 3 to the extent these are applicable to the existing stocks.

2. *All wood preservative products containing pentachlorophenol (or its salts) in existence on July 13, 1984.* a. Existing Stocks for this subsection are defined as any wood preservative product containing pentachlorophenol (or its salts) formulated for end-use and any technical grade pentachlorophenol (or its salts) which is in existence on July 13, 1984.

b. Within 60 days July 13, 1984, any registrant who has existing stocks in his care, custody or control may provide EPA with an itemized inventory of all existing stocks for which the levels of HxCDD are unknown or are known to exceed 15 ppm HxCDD. Unless such an itemized inventory is provided to the Agency, after 60 days from publication of this Notice existing stocks containing more than 15 ppm HxCDD may not be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment,

or received (and having been so received) delivered or offered for delivery by the registrant to any other persons.

c. Registrants who have filed an itemized inventory under (b) above, may until September 1, 1987, continue to distribute, sell, offer for sale, hold for sale, ship, deliver for shipment, or receive (and having so received) deliver or offer for delivery any existing stocks containing greater than 15 ppm HxCDD if 6 months from submission of the initial itemized inventory of stocks, and every six months thereafter until the inventory is depleted, the registrant submits a revised inventory of existing stocks and a detailed description of depletion of the inventory, sufficient to allow the Agency to follow dispersal of the initial inventory. After September 1, 1987, a registrant may not distribute, sell, offer for sale, hold for sale, ship, deliver for shipment, or receive (and having so received) deliver or offer for delivery any product containing pentachlorophenol (or its salts) for use as a wood preservative, including technical grade products for formulation into wood preservative products, unless the HxCDD content of the product is 15 ppm or less.

d. Formulators of end-use wood preservative products may use existing stocks of technical grade pentachlorophenol (or its salts) containing greater than 15 ppm HxCDD to formulate their registered products provided the inventory required by (b) and (c) above, is expanded to include any end-use products formulated from existing stocks of technical grade pentachlorophenol (or its salts).

e. Persons other than registrants of affected products containing pentachlorophenol (or its salts) may continue to distribute, sell, offer for sale, hold for sale, ship, deliver for shipment, or receive (and having so received) deliver or offer for delivery to any person any existing stocks of products containing pentachlorophenol (or its salts).

f. All persons taking advantage of this subunit of the Existing Stocks Provision must also comply fully with the requirements of subunit (1) above.

3. *All Wood Preservative Products Containing Pentachlorophenol (Or Its Salts) Produced After July 13, 1984 and Before Imposition of the 1 ppm Limit on HxCDD.* a. Existing stocks for this subunit of the Existing Stock Provision are defined as any wood preservative products containing pentachlorophenol (or its salts) formulated for end-use and all technical grade pentachlorophenol (or its salts), except those stocks governed by Subunit 2 above, which are in existence on the date of imposition of a limit of 1 ppm HxCDD and which contain greater than 1 ppm HxCDD, and all end-use products which are formulated from existing stock technical grade pentachlorophenol (or its salts) (as defined by this paragraph) after that date:

b. Registrants who have care, custody or control of existing stocks of technical grade pentachlorophenol (or its salts) may for 60 days after imposition of a 1 ppm limit on HxCDD continue to distribute, sell, hold for sale, ship, deliver for shipment, or receive and (having so received) deliver or offer for delivery to any person existing stocks of the technical grade pentachlorophenol.

c. Registrants of end-use wood preservative products containing pentachlorophenol (or its salts) may for 180 days after imposition of a 1 ppm limit on HxCDD continue to distribute, sell, hold for sale, ship, deliver for shipment, or receive and (having so received) deliver or offer for delivery to any person existing stocks of any product containing pentachlorophenol (or its salts) which has been formulated for end-use.

d. Persons other than registrants of pesticide products containing pentachlorophenol (or its salts) may for 60 days after imposition of a 1 ppm limit on HxCDD continue to distribute, sell, hold for sale, ship, deliver for shipment, or receive and (having so received) deliver or offer for delivery to any person existing stocks of the technical grade pentachlorophenol (or its salts).

e. Persons other than registrants of pesticide products containing pentachlorophenol (or its salts) may continue to distribute, sell, hold for sale, ship, deliver for shipment, or offer for delivery to any person existing stocks of any product containing pentachlorophenol (or its salts) which has been formulated for end-use.

f. All persons taking advantage of this subunit of the Existing Stocks Provision must also comply fully with the requirements of subunit (1), above.

V. Consumer Awareness Program

The American Wood Preservers Institute (AWPI) and the Society of American Wood Preservers (SAWP) previously proposed to voluntary consumer awareness program to the Agency designed to educate the consumer about the proper uses of pressure-treated wood products and the precautions to follow when using wood products. The Agency has chosen to implement this concept by requiring that all persons who pressure-treat wood for commercial distribution participate in implementing a Consumer Awareness Program (CAP). Such a program is necessary to assure that the use of pressure-treated wood products does not pose an unreasonable adverse effect. The focus of this program is a Consumer Information Sheet (CIS), which will be distributed to purchasers of pressure-treated wood products at the time of sale or delivery. Based on its expectation that this CIS can adequately serve to inform the public of the safe use, handling and disposal measures for treated wood products, the Agency has decided not to implement a TSCA rulemaking at this time.

The obligation to implement an adequate Consumer Awareness Program is on the users of the wood preservatives who pressure treated wood commercially. To fulfill this obligation they must:

1. Distribute adequate consumer information sheets with each shipment of pressure-treated wood so that at least one CIS will be securely attached to each bundle or batch of treated wood as it leaves the treating plant.

2. Attach at least one CIS to each invoice for sale of pressure-treated wood.

3. Make available to retailers, wholesalers, and distributors an adequate supply of CIS's and signs or placards to inform customers of the existence of the CIS.

4. Encourage retailers to display signs or placards informing consumers of the availability of the CIS's and to make the CIS's readily available to the consumer.

Although only the users of the wood preservatives are actually required by the label instructions to implement the Consumer Awareness Program, EPA expects and encourages other organizations to participate as well. Such additional organizations include the wood preserving industry trade associations and the registrants of the affected wood preservative products. These organizations may be able to implement parts of the program more economically and efficiently, for example, by printing Consumer Information Sheets in bulk for distribution or by serving as a centralized clearinghouse for encouraging distributors and retailers of treated wood to implement the Consumer Awareness Program fully. Two wood preservative trade associations, the American Wood Preservers Institute and the Society of American Wood Preservers, previously submitted a plan for implementing a Consumer Awareness Program to EPA. In this plan the wood treaters, the trade associations and the registrants would work together to attempt to assure the

program is effective. EPA has reviewed this plan and has found it to be a satisfactory means of carrying out the label requirements and encourages the industry to fully implement it. The ultimate obligation to carry out an adequate program to inform the public, however, lies on the users of the wood preservatives for pressure-treatment of wood as a condition of their legal use of the products.

Each wood treater will be able to customize its CIS. Thus, the individual wood treater's CIS, at a minimum, would contain in one section the information required by EPA insofar as it applies to the wood preserver's product. The CIS might also include in a separate section additional information not contradictory to the statements required by EPA. Such additional information might include the treater's name, address and logo. In all cases, however, the information required by EPA would have to be distinct and clearly legible using Bodoni Bold 12 point type.

The wood treater will have primary responsibility for ensuring that the CIS is disseminated to the consuming public. Wood treaters are expected to distribute CIS's and signs or placards to their retailers, wholesalers and distributors, attach a CIS to each bundle or batch of treated wood, and attach a CIS to each invoice. The preservative manufacturers, formulators and trade associations may also work to ensure that the consumer receives the necessary product information. The Consumer Awareness Program must be implemented when the amended labels for the wood preservatives appear on the market. The information which the Agency requires to be included in the CIS is set forth in Unit III-A of this Notice, and must be attached as labeling to the wood preservative products.

VI. Comments of Scientific Advisory Panel and of the Secretary of Agriculture and the Environmental Protection Agency's Response

A. Comments of the Scientific Advisory Panel (SAP)

The Scientific Advisory Panel held an open meeting on June 17 through 19, 1981 in Arlington, Virginia, to review the Preliminary Notice of Determination concluding the RPAR for the wood preservative chemicals. At this meeting, the SAP heard presentations by the Agency, the registrants, and other interested members of the public. The comments of the SAP are published in full below:

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) Scientific Advisory Panel

Review of Preliminary Notice of Determination Concluding the Rebuttable Presumption Against Registration (RPAR) on Wood Preservative Uses of Pentachlorophenol, Inorganic Arsenicals, and Creosote

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel has completed review of plans by the Environmental Protection Agency (EPA) for initiation of regulatory action on pesticide products containing pentachlorophenol, inorganic arsenicals, and creosote under the provisions of section 6(b)(1) of FIFRA as amended. The review was completed in open meetings held in Arlington, Virginia, during the period June 17-19, 1981. The following Panel members participated in the review: Drs. Torgeson, Davis, Smuckler, Davies, and Metcalf (June 17 and 18).

Maximum public participation was encouraged for the review. Public notice of the meeting was published in the Federal Register on Tuesday, June 2, 1981. In addition, telephone calls were received from and special mailings sent to the general public expressing an interest in activities of the Panel. Written and oral statements were received from the technical staff of the Environmental Protection Agency, from representatives of the American Wood Preservers Institute, Cherokee Industries, Inc., and from several private individuals.

The Panel wishes to express its appreciation to Special Pesticide Review Division and Hazard Evaluation Division staff for their informative briefings. In particular, the Panel wishes to thank Dr. Minnie Sochard for an outstanding scientific briefing on the mutagenicity of the inorganic arsenical compounds. On the other hand, the Panel deplores the lack of scientific objectivity of the presentations by industry concerning biological hazards of wood preservatives, and finds the industry's denial of scientific data concerning the mutagenicity and carcinogenicity of the wood preservatives to be disturbing.

In consideration of all matters brought out during the meeting and careful review of all documents presented by the Agency and other parties, the Panel unanimously submits the following report:*

Report of Scientific Advisory Panel Recommendations

The Agency requested the Panel to focus its attention upon a set of issues relating to each of the three wood preservatives (or groups of the wood preservatives) under consideration. There follows a list of the issues and the Panel's response thereto:

Pentachlorophenol

1. In PD-1, margins of safety were calculated based on a no observable effect level (NOEL) of 5.8 mg/kg/day (commercial penta) in a rat teratology study. However, since 5.0 mg/kg/day purified penta produced delayed skull ossification in the same study and this was the lowest dose tested, the Agency stated in the PD-2/3 that no NOEL could be accurately determined. Does the Panel agree that the occurrence of delayed skull ossification indicates an adverse effect which precludes the establishment of a NOEL at that level?

Panel response. The Panel believes that one must assume some effect on in utero growth, given the considerable loss of litters in the rat teratology study. Therefore, the Panel agrees that establishment of a No Effect Level (NOEL) at 5.8 mg/kg/day is precluded both by the litter loss phenomenon and by the delayed skull ossification which occurred at the above level in the rat study.

2. Although the fetotoxic margin of safety for homeowner application was estimated to be as low as 6 (see p. 357) and the oncogenic risk was estimated to be as low as 1.3×10^{-4} (see p. 364), the Agency did not propose to restrict the sale of over-the-counter products containing 5% or less penta (i.e., ready-to-use penta products). These upper bounds of the risks estimates were based on the assumption that the individual may spill an amount of commercial penta on himself equivalent to the amount that would cover both hands (i.e., 6 ml; see pp. 331-332), a situation that the Agency does not consider likely. Does the Panel believe the Agency is adequately protecting human health by permitting the over-the-counter sales of 5% or less penta to continue?

Panel response. The Panel believes that the Agency is adequately protecting human health by permitting the over-the-counter sales of 5% or less penta to continue, *provided* that the label requires: (1) Use of protective clothing, including rubberized gauntlets, goggles and coveralls; and (2) that all uses take place in a well ventilated area.

*All page numbers in the report refer to the EPA Position Document 2/3.

3. The Agency's estimate of risk to log home residents is currently based on the three measurements of airborne penta in penta-treated log homes (0.77, 0.38, and 0.20 ug/m³). Although the Agency has proposed the prohibition of future use of penta on the interior surfaces of living quarters, does the Panel have any opinions regarding the need for further exposure studies of log homes?

Panel response. The lack of data on human exposure to penta suggests that a more critical review of the fate of penta and its pathways in the environment is badly needed. A full assessment of human urinary excretion of penta, which appears to be widespread in the U.S. population is most important. Additional exposure and epidemiological studies should be conducted. Any future decisions regarding penta should be based on the additional data.

4. The Agency has information suggesting that penta is photolytically converted to hexachlorodibenzo-p-dioxin and hexachlorobenzene. Does the Panel believe the Agency should investigate this subject further in order to adequately assess the risk to individuals exposed to penta-treated wood?

Panel response. Yes.

5. On pages 273–274 of PD–2/3, the Agency addresses the role of the wood preserving industry as a source of ambient background levels of penta in the environment. In the absence of data to the contrary, the Agency's common sense approach assumed that the amount of ambient penta levels contributed by an industry is related to the amount of penta used by that industry. The wood preserving industry uses about 80% of the penta produced in the U.S. Does the Panel agree with this approach? If not, can the Panel suggest a feasible/appropriate method of more accurately addressing the question of the source of environmental penta?

Panel response. The Panel believes that it is essentially the Agency's responsibility to develop a method of determining the source of environmental penta. In general, the Agency's reasoning appears to be sound. However, the Panel wishes to stress the need for determining the use(s) of the remaining 20 percent of the penta produced in the U.S., in order that an accurate exposure assessment can be made. The Agency also presented the Panel with a set of proposed regulatory actions and modifications relating to penta. These actions are listed below followed by the Panel's recommendation:

1. *Require protective clothing—gloves.* Panel concurs with the proviso that elbow length rubberized gauntlets be required, *not* merely gloves.

2. *Require protective clothing—disposable coveralls.* Panel concurs.

3. *Require gloves and respirators during spraying (non-pressure) and opening cylinder doors—(pressure treatment plants).* Panel concurs, with the proviso that coveralls be required as well as gloves and respirators.

4. *Require dust masks:* Not applicable to penta.

5. *Require proper disposal of protective clothing.* Panel concurs.

6. *Prohibit eating, drinking, and smoking during application.* Panel concurs.

7. *Require closed systems during emptying and mixing operations.* Panel concurs, with the proviso that such systems be *recommended* for use wherever practicable, rather than required. The Panel believes such a requirement would impose an unfair burden on small operators in terms of additional capital investment, and it encourages the Agency to search for less costly alternatives.

8. *Classify for restricted use.* Panel concurs; however, see also Panel response to Issue #2, page 2.

9. *Limit application of pesticide or use of treated wood to outdoors.* Panel concurs, but wishes also to express its concern over the problem of disposal of treated wood.

10. *Prohibit uses likely to result in contamination of food, feed or potable water.* Panel concurs.

11. Not applicable to penta.

12. *Cancel spray application for homeowner use.* Panel concurs.

13. *Require protective clothing—neoprene suit and respirator.* Panel concurs.

In concluding its review of penta, the Panel wishes to stress two further points: (1) EPA should impose new monitoring requirements in order to establish the sources of penta in the environment; and (2) EPA should require industry to reduce the dioxin content of penta to as low a level as is technologically and economically feasible.

Inorganic Arsenicals

There follows a set of issues relating to the inorganic arsenicals posed to the Panel by EPA and the Panel's response thereto:

1. Given that arsenic occurs predominantly in the pentavalent oxidation state in treated wood, problems still remain in the speciation of arsenic in mammals and the environment and in the determination of the effective toxicological agent.

a. How can analytical problems of determining the species of arsenic in the Taiwanese well-water study be best resolved for risk assessment? (CAG, 1978b)

b. If pentavalent arsenic is absorbed, will it convert in the body to trivalent arsenic? (pp. 95–101)

Panel response. The Panel does not believe there is sufficient scientific information to resolve this question at the present time.

2. The estimated oncogenic risks associated with the use of arsenic as a wood preservative are very high. The regulatory options are not correspondingly stringent (Chapter 5). Consequently,

a. Are the Agency's exposure calculations for workers and consumers realistic? (pp. 195–210)

b. Is the dermal absorption factor used to estimate human exposure to arsenic from treated wood appropriate? (p. 199)

c. Is it appropriate to use the Taiwanese study, the smelters study and other epidemiology studies (in which total arsenic levels are used, regardless of oxidation state) to estimate exposure to pentavalent arsenic in treated wood? (pps. 214–217)

d. Are there other factors affecting the oncogenic potency of arsenic in the epidemiology studies on which the risk model is based?

Panel response. The Panel chooses not to respond directly to the four parts of Question #2. However, the Panel does believe that with the additional recommendations which it is making in connection with the Agency's proposed regulatory options and modifications, such options and modifications are sufficiently stringent to reduce risk due to arsenic exposure to a satisfactory level.

3. Is additional sampling needed to determine exposure to arsenic in all-weather wood foundations? The Agency is concerned because,

a. Exposure ranges from the National Bureau of Standards (NBS), American Wood Preservers Institute (AWPI), and National Concrete and Masonry studies vary significantly. (p. 189)

b. The air sampling techniques used may not have been appropriate, i.e., air volume of samplers, filter materials, absence of arsine gas measurements.

Panel response. The Panel does not believe that additional measurements are necessary.

4. Should the Agency reconsider the present teratology and fetotoxicity triggers for the inorganic arsenicals?

Panel response. The Panel does not believe that the teratology and

fetotoxicity triggers need to be reconsidered. However, additional exposure data on the arsenicals is needed, and the Panel encourages EPA to develop and implement monitoring studies to obtain such data.

With regard to the set of proposed regulatory options and modifications for the inorganic arsenicals, the Panel concurs in all the proposed actions applying to both penta and arsenic, with the same provisos as indicated above. With regard to the options pertaining to arsenic alone, the Panel recommends as follows:

(4) *Require Dust Masks:* Panel concurs.

(10) *Prohibit uses likely to result in contamination of food, feed, or potable water* (also applicable to penta and creosote). Following discussion of the apparent need for arsenic treatment of grape stakes, a use EPA has proposed cancelling, the Panel chooses to defer to EPA's judgment on this issue.

(11) *Reduce arsenic surface residues on treated wood.* The Panel recommends reducing arsenical residues on treated wood by using clean wood for treatment. The Panel also notes the need for developing a good sealant for outdoor wood treated with arsenic.

Creosote

There follows a set of issues relating to creosote posed to the Panel by EPA and the Panel's response thereto:

1. The Agency determination that creosote is a mutagen is based on consideration of the following issues (see pp. 75–81):

a. Creosote is a complex mixture exhibiting toxicity as well as mutagenicity: Creosote P1 and P2 are demonstrably toxic in microbial and mammalian test systems.

b. Responsiveness of the Ames test to the mutagenicity of creosote as well as other complex mixtures. Does the Panel confirm the bases of our reasoning?

Panel response. The Panel confirms the basis of the Agency's reasoning.

2. Epidemiology of Creosote—The Agency did not use the Tabershaw and American Association of Railroads surveys (see pp. 49–51) to estimate the oncogenic risk to humans of creosote because of inadequacies of the studies.

a. Can these human studies be used to substantiate the need for well-conducted epidemiology studies?

b. Can the information in these studies (i.e., length of employment, age and race distribution, etc.) be used in the design of improved studies?

Panel response. The Panel recommends that in light of the inadequacies of the above mentioned studies, EPA conduct additional epidemiological studies to obtain the necessary data. The data in the Tabershaw and AAR studies can be used in the design of improved studies.

3. The Agency performed a qualitative evaluation, rather than a quantitative risk assessment, for oncogenicity of creosote (see pp. 85–94) because of the variable composition of creosote due to source and industrial preparation, synergism among its chemical components, insufficient exposure information and lack of an appropriate epidemiology study for direct estimation of human risk. Does the Panel advise the Agency to ask for:

a. Rodent inhalation studies using creosote aerosols?

b. Epidemiology studies of wood preservative treatment plant workers?

c. More extensive exposure studies in wood preservative pressure treatment plant in which creosote vapor and polycyclic particulate organic matter (PPOM) are sampled quantitatively and qualitatively (the latter to identify chemical profiles of airborne material)?

Panel response. The Panel believes there is enough rodent data available on creosote. However, it does recommend additional epidemiological studies of wood preservative treatment plant workers and more extensive exposure studies in such plants.

4. It has been brought to the Agency's attention that some creosote is used in commercial non-pressure operations. Does the Panel advise that the Agency seek exposure data for estimation of hazard to workers in non-pressure treatment plants?

Panel response. The Panel believes it logical that EPA seek such information.

5. Creosote for home and farm use, railroad tie repair, and groundline treatment of poles is being proposed as restricted to certified applicators only. In light of the lack of exposure data, other than isolated case studies, does the Panel think this restriction is justified?

Panel response. The Panel believes the certified applicator requirement justified except in the case of farm use where it appears to be too restrictive. The Panel suggests the Agency examine ways to alleviate this situation.

With regard to the Agency's proposed regulatory options and modifications pertaining to creosote, the Panel concurs in all of the Agency's recommendations with one exception. As indicated above, the Panel believes it unfair to small farmers to require them to seek certification in order to use creosote and recommends that ways be found of enabling farmers to use this compound without becoming certified.

The Panel also recommends that EPA examine further the possible use of sealants in connection with indoor uses of creosote, some of which the industry claims are essential.

For the Chairman.

Certified as an accurate report of Findings:

Philip H. Gray, Jr.,

Executive Secretary, FIFRA Scientific Advisory Panel.

Date: July 15, 1981.

B. Response of the Agency to the Comments of the SAP

The SAP agreed with most of the Agency's proposed regulatory actions for the wood preservative uses of creosote, pentachlorophenol and the inorganic arsenicals. Certain changes in the regulatory decision have been made in response to the recommendations of the SAP. Specifically, the Agency has responded to the SAP's concerns regarding the imposition of the requirement for a closed emptying and mixing system for the prilled and flaked formulations of pentachlorophenol (and powdered sodium pentachlorophenate) by modifying its proposed regulatory action to provide a 3 year "phase-in" period for treatment plants to install closed systems. In the interim, protective clothing and respirators will be required to reduce worker exposure.

The Agency has also reconsidered its proposed action to prohibit the application of creosote to all wood intended for interior use in light of the SAP's recommendations and has concluded that the use of creosote wood-block flooring in an industrial setting poses limited risks if the flooring is sealed.

In response to the Panel's recommendation that applicators who handle pentachlorophenol wear rubberized gauntlets, the Agency has concluded that worker's arms will be sufficiently protected from exposure by the protective clothing measures required by this Notice. This conclusion is supported by field observations by Agency personnel that workers would cut the gauntlets because this protective device was too hot and cumbersome.

With regard to the Panel's recommendation that EPA require industry to reduce the dioxin content of pentachlorophenol products to as low a level as is technologically and economically feasible, the Agency has determined to impose an immediate limit of 15 ppm for hexachlorodibenzo-p-dioxin and to require that registrants reduce this contaminant to 1.0 ppm or below within 18 months.

With regard to the issue of the speciation of arsenic in the Taiwanese well-water study and the conversion of pentavalent arsenic to trivalent arsenic in the body, the Agency has received additional information since the time of the SAP response which sheds further light of these issues. Specifically, the new information indicates that (1) the arsenic in the Taiwanese well-water was 80 percent pentavalent and (2) pentavalent arsenic absorbed by the body has been shown to convert to the trivalent form. This information does not necessitate a change in the Agency's regulatory position because the Agency's determinations were based on studies showing that both valence states of arsenic have the potential to produce similar adverse effects.

With regard to the Panel's suggestion that the Agency require certain additional studies, the Agency has determined to require the submission of certain data pursuant to section 3(c)(2)(B) of FIFRA. In those areas where the Agency is not requesting additional data, this conclusion is based on the Agency's belief that, even though there may be uncertainties in certain of the risk parameters at this time, the protective measures which the Agency is requiring will be adequate to reduce those risks to an acceptable level.

Finally, the Agency believes that any changes in the proposed regulatory action which have been made in response to comments and other information received after the SAP review are consistent with the SAP's recommendations. Such changes either reflect a different method for achieving the same degree of risk reduction as the method proposed in the Preliminary Notice of Determination or are responsive to information which demonstrates a lower degree of exposure than estimated previously by the Agency.

C. Comments of the United States Department of Agriculture

The United States Department of Agriculture (USDA) also responded to the PD 2/3 recommendations. Their comments are printed in full below:

Honorable Anne M. Gorsuch,
Administrator, U.S. Environmental Protection Agency, Washington, DC 20460

Dear Ms. Gorsuch: This is the U.S. Department of Agriculture's response to the U.S. Environmental Protection Agency's (EPA) Preliminary Notice of Determination concluding the Rebuttable Presumption Against Registration (RPAR) of the wood preservative uses of pesticide products containing creosote, inorganic arsenicals, and pentachlorophenol.

We concur with the decisions to cancel the spray method of application of products containing five percent or less pentachlorophenol and to continue the registrations of the other wood preservative uses of creosote, pentacholorophenol, and the inorganic arsenicals. We have identified several problems with the proposed modifications in the terms and conditions of the registrations. Our specific comments are contained in the enclosure which is an integral part of this response.

We believe EPA has underestimated the economic impacts that could result if specific uses of the wood preservatives were cancelled or restricted. There are no indications that EPA has taken into account data that was included in Chapter 8 of the USDA-States-EPA Assessment Team Report transmitted to the agency on November 4, 1980. For example, EPA apparently did not consider economic impacts to local communities, omitted the costs of converting treatment plants from use of arsenicals to either creosote or pentachlorophenol, only considered first-year impacts for certain uses, and underestimated the use of untreated wood as a substitute for treated sills, plates and structural framing.

We agree that more data are needed on applicator exposure, disposal of treated wood, and residue level of the wood preservatives in water, air, and food or feed that result from the uses of these products. The Department is currently involved in studies on migration of creosote in soil and water, determination of levels of wood preservatives in the air around or in treated wood structures, development of methods to reduce vaporization and surface residues, quantification of applicator exposure, and the determination of morganic arsenic in food crops. We are willing to cooperate with EPA and industry in considering the need for additional data or studies as necessary.

Sincerely,

Barry R. Flamm,
Director.

2 Enclosures

Secretary of Agriculture's Specific Comments to the Wood Preservatives Notice of Determination PD 2/3

We agree with the recommended label modifications requiring protective clothing and equipment with one exception. The use of a half-mask canister or cartridge respirator is not necessary when entering arsenical pressure treatment cylinders. Since these wood preservatives are inorganic salts which have no measurable vapor pressure, there are no fumes that need to be trapped. A dust mask which would prevent inhalation of arsenate particles or mist would be sufficient.

Clarification is needed regarding the requirements for protective clothing for certified and noncertified applicators of creosote and pentachlorophenol for home and farm uses. For applications of creosote or pentachlorophenol concentrations of greater than 5 percent, no differentiation in clothing requirements should exist; that is, both certified and noncertified applicators (who may be applying the chemical under the supervision of a certified applicator) should wear the same protective clothing. Once pentachlorophenol is diluted to 5 percent or less, or in the case of products sold in a 5 percent or less formulation, long-sleeved shirts and trousers offer adequate protection.

The use of wood preservatives for industrial uses should be restricted where the worker has the risk of exposure on a daily basis. However, the restrictions on homeowner use and on those contractors doing construction work for the homeowner appear to be extreme given the limited risk of exposure for persons in these categories. For example, classifying the brush-on use of inorganic arsenicals as restricted-use pesticides would mean that carpenters who want to treat the end cuts during fabrication of a structure must be certified pesticide applicators. We are also concerned that the proposed restricted-use classification will require certification of entirely new groups of workers who do not fit into the classification of commercial forestry, or farm-oriented certified applicators. We question whether current certification programs apply to these new groups.

The proposed statements prohibiting the application of creosote, pentachlorophenol, or inorganic arsenicals to wood which is intended for interiors, except for those support structures which are in contact with soil in barns, stables, similar sites, and all weather wood foundations, sills and plates, may cancel some uses for which there are no substitutes. Exposure can be reduced for many of these uses, such as sealing creosote treated woodblock flooring beneath a pitch wearing surface. Another important use is that of penta treated wood for laminated timbers for warehouses, indoor swimming pools, and other buildings where the type of use creates a high decay hazard. Other preservatives are not practical. Creosote is an unsuitable preservative for esthetic reasons and arsenicals interfere with gluing. Recent research has shown that the exposure from the use of penta in enclosures is small, generally less than 1 microgram per cubic meter which can be reduced by 80 to 90 percent by coatings or by surface treatments that convert the penta to chemicals with essentially zero vapor pressure. (We are enclosing a research paper about clear coatings.) A solution formulated for the latter use is now commercially available. We believe such formulations can be used safely, and these specialty uses should not be limited where exposure can be effectively reduced.

The precautionary statements proposed in the Position Document which prohibit the application of the inorganic arsenicals, creosote, or pentachlorophenol to wood which will be used in a manner which may result in direct exposure to domestic animals or livestock, or in the contamination of food, feed, or drinking and irrigation water (e.g., food crates, irrigation flumes, vegetable stakes, feedlot bins and watering troughs), could prohibit virtually all agricultural uses of treated wood (such as fence posts, gates, cattle guards, supports for feed bunks, retaining walls, etc.) since it can be argued that any of these uses could result in direct animal contact. A strict interpretation of these restrictions could also prohibit the use of treated wood in the construction of bridges or docks because in many cases treated

timbers are in direct contact with surface water or the subsurface water table. Although more data are needed on residue levels of the wood preservatives that result from such uses, available data in the USDA-States-EPA Assessment Report does not support the contention that these uses will result in significant exposure to the general public. A case in point is the use of arsenical treated wood for vegetable stakes and grape stakes, watering troughs, and feed bunks. If "visibly clean" wood treated which contains not more than 0.1 mg. of soluble arsenic per 100 cm^3, and if it is assumed that all available arsenic is solubilized in the initial fill of a watering trough 2 feet x 2 feet x 6 feet, the arsenic content in that water would not exceed the maximum drinking water standards for humans as established by the Department of Health, Education, and Welfare in 1962. A strong data base (see Chapter 10, Report of the USDA-States-EPA Preservative Assessment Team) supports the thesis that contact of plants with arsenates does not increase the arsenic content of these plants.

While no food tolerances have been set specifically for the wood preservative pesticides, there are tolerances for arsenic residues on a wide variety of food crops. Normal residue levels for any crop could be used as the tolerance level for that crop to insure that no increase in residue resulted from the use of treated wood. The fact that "clean" salt pressure treated wood would have essentially no residue which could be picked up by a food crop must be taken into account, especially when considering the fact that crops grow in a soil environment containing 2 to 5 parts per million arsenic and that plants contain arsenic as a natural component of the fruit, leaf, or root. The use of arsenic as a plant growth regulator in grapefruit production and the long-term use of arsenical treated wood for vegetable and grape stakes—both without any increase in arsenic levels of the produce—are also strong arguments that the restrictions proposed for arsenical treated wood for agricultural uses (greenhouses, mushroom flats, support stakes for vegetables and grapes, etc.) are inappropriate.

The proposed label requirement that inline filters must be used with arsenical preservatives may not achieve the desired result of limiting surface deposits of arsenical preservatives unless the filters are properly maintained. The requirement that a post impregnation vacuum be applied is poor technology, at least in the case of chromated copper arsenate (CCA) preservatives, since this practice will introduce wood sugars into the treating solutions and result in sludging of CCA solids in storage and working tanks, thus aggravating the very problem the requirement is intended to solve. A simple label requirement that arsenical treated wood must be visibly clean would achieve the result desired and would not place EPA in the position of dictating treatment methodology and fixing the state-of-the-art. The post-treatment rinsing to remove surface residues could be made mandatory for wood to be used in food contact applications. However, the water used to wash the wood would have to be collected, stored, and disposed of as a hazardous waste. Since few waste disposal sites will take arsenic wastes, this process would greatly add to the cost of wood treatment and add to the already critical waste disposal problem. We believe it would be preferable to set concentration or residue standards and let industry meet the standard in ways that best suit their specific situations.

The proposed requirement that treated wood either be disposed of by onsite burial or that if the pesticide-treated wood wastes exceed 1,000 kilograms per site, disposal must comply with the provisions of the Resource Conservation and Recovery Act, as amended, will result in significant costs contrary to EPA's expectation. There are over 4,000 bridges on National Forest System lands which utilize treated timber piles, posts, and planks as bridge components. The total weight of each bridge would exceed 1,000 kg in about every case. Unusable materials from these bridges are often burned when the bridges are replaced. The cost of dismantling, hauling, and disposing of this material in approved disposal sites will be significant.

Such added costs would adversely impact the cost of road construction which ultimately affects our ability to manage the forest resources. We believe such requirements are premature because EPA admits that the hazards of current disposal methods have not been quantified. We are willing to work with the EPA in the development of scientific data designed to valuate workable disposal methods.

We are also concerned with the proposal to require labels under the Toxic Substances Control Act (TSCA) requiring impervious gloves to be worn by all who handle preservative treated wood and requiring individuals who saw pesticide treated wood to wear protective clothing and a dust mask. We feel these regulations involve unrealistic and unenforceable restrictions.

D. Agency's Response to the Comments of the United States Department of Agriculture

The U.S. Department of Agriculture concurred generally with the Agency's decision to continue the registrations of the wood preservative uses of pentachlorophenol, creosote and the inorganic arsenicals, with modifications in the terms and conditions of the registrations. USDA furnished specific comments on several proposed modifications of the terms and conditions of registration of these pesticides. The Agency's responses to these comments are set forth below.

USDA apparently concurred with the Agency's proposal in the Preliminary Notice of Determination to cancel registrations for pentachlorophenol in concentrations less than 5 percent intended for application by a spray method. The Agency has decided not to cancel registrations for this use of pentachlorophenol, but will instead require that all spray application uses of pentachlorophenol will be classified for restricted use. The Agency believes that these uses can be retained without unreasonable adverse effects on the environment if the pesticide is used only by certified applicators required to wear protective clothing, a respirator, head covering, and eye protection while spraying.

USDA stated its concern that EPA had underestimated the economic impacts that could result if specific uses of the wood preservatives were cancelled or restricted. The Agency believes that it has taken such considerations into account in reaching its conclusions about continued use of the wood preserving chemicals. The Agency believes that restricted use classification is necessary for most uses of the wood preservatives in order to assure that they are used by applicators with the requisite training to handle these products properly. The Agency has taken into account USDA's concern about the need for treated wood sills, plates and structural framing, and has permitted such uses with certain restrictions.

USDA has suggested that more data is needed on applicator exposure, disposal of treated wood, and residue levels of wood preservatives in water, air, food and feed. The Agency is always receptive to additional data pertinent to its regulatory positions, and would certainly consider any data that is submitted that would bear on any of the positions taken in this Notice. However, the Agency believes that the positions taken in this Notice have a sound factual basis as described in detail in the PD 4.

USDA commented that respirators are not necessary for applicators who enter arsenical pressure-treatment cylinders because the inorganic arsenicals do not release fumes. The Agency agrees and has eliminated this requirement. The Agency also agrees with USDA's suggestion that dust masks are useful in preventing inhalation of arsenate particles. However, the Agency believes that respirators will be more effective minimizing inhalation exposure of employees at arsenical plants. Therefore, the agency has adopted a Permissible Exposure Level standard whereby respirators will be required for workers in arsenical plants if the level of arsenic in the ambient air exceeds 10 $\mu g/m^3$, averaged over an 8-hour workday.

USDA stated that applicators of creosote, and of pentachlorophenol in concentrations above 5 percent should have the same protective clothing requirements. The Agency agrees that protective clothing requirements should generally be the same for all applicators

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of creosote and pentachlorophenol. The Agency has concluded that gloves, disposable coveralls or other suitable impermeable protective clothing, provide adequate protection for persons treating wood for non-spray applications of pentachlorophenol. However, additional protective clothing will be required for certified applicators of pentachlorophenol who use the spray method. Such applicators shall be required to wear suitable head covering and eye protection (goggles) during spraying activities.

USDA contended that pesticides which are used by homeowners and by contractors performing construction for homeowners should not be classified for restricted use because of their relatively limited exposure. The Agency agrees in the case of brush-on arsenicals in construction and has decided not to classify the brush-on arsenicals for restricted use; the label, however, will indicate these products are for commercial construction use only and are not for household use. EPA believes that a restricted use classification is necessary for other home and farm products to avoid unreasonable adverse effects.

USDA expressed concern that the Agency's proposed limitations on interior uses of the wood preservatives were too stringent and would result in the unavilability of wood preservatives for some uses for which there are no substitutes. USDA commented that exposure can be reduced by effective sealers to a level where the pesticides can be used safely. The Agency agrees, and will permit limited interior uses of pentachlorophenol or creosote-treated wood where exposures can be reduced to an acceptable level by the use of sealers. Arsenic treated wood may be used if it is first vacuumed clean of dust. This determination will be implemented for pressure-treated wood by means of a Consumer Information Sheet distributed by wood treaters to consumers of treated wood products.

USDA commented that prohibitions against the application of wood preservatives to wood that will be used in a manner which may result in direct exposure to animals or contamination of food, feed, drinking or irrigation water are unnecessarily broad. These restrictions, USDA argued, "could prohibit virtually all agricultural uses of treated wood" and could prohibit the use of treated wood on docks and bridges. In the view of USDA, available data does not support the contention that these uses will result in significant exposures to the public. The Agency has refined its label requirements in response to USDA comments to allow for uses involving incidental contact with water such as docks and bridges and for other uses where there is unlikely to be contact by animals or livestock.

USDA objected to a proposed labeling requirement in the Preliminary Notice of Determination dictating the method to be used to reduce surface deposits on wood treated with arsenical compounds, and favored a labeling requirement that "arsenical treated wood must be visibly clean." The Agency agrees and has included such a provision in this Notice.

USDA objected to the requirement proposed in the Preliminary Notice that treated wood be disposed of by onsite burial, and that wood wastes in excess of 1,000 kilograms per site be disposed of in accordance with the provisions of the Resource Conservation Recovery Act. The CIS addresses this issue and provides that treated wood should be disposed of by ordinary trash collection or burial; that treated wood should not be burned in open fires or in stoves or fireplaces, but may be burned for commercial or industrial applications in accordance with State and Federal regulations.

USDA expressed concern about the Agency's proposal to require all persons handling treated wood to wear impervious gloves, and requiring individuals who saw treated wood to wear protective clothing and a dust mask. It characterized such regulations as unrealistic and unenforceable. The Agency believes that such precautions are desirable to minimize inhalation and dermal exposure to the wood preservatives. Therefore, the Agency is requiring industry to implement a Consumer Awareness Program to alert infrequent users of wood preservatives to these and other precautions to be taken in the use of preserved wood.

VII. Procedural Matters

This Notice announces the Agency's intent to cancel the registrations of wood preservative products containing creosote, pentachlorophenol (or its salts), or inorganic arsenic unless the changes required by this Notice are made. In order to avoid cancellation, registrants must submit an application for amended registration which incorporates the modifications to the terms and conditions of registration set forth in Unit IV of this Notice. An applicant for a new registration whose product is subject to this Notice may also submit an amended application as set forth below to avoid the denial of his application. Under sections 6(b)(1) and 3(c)(6) of FIFRA, applicants, registrants and certain other adversely affected parties may also request a hearing on the cancellation and denial actions that this Notice initiates. Unless the registrant or applicant makes the required corrections or a hearing is properly requested with regard to a particular registration or application, the registration will be cancelled or the application denied. This Unit of the Notice explains how such persons may request a hearing (and the consequences of requesting or failing to request a hearing in accordance with the procedures specified in this Notice) and how a registrant may amend its registrations or an applicant amend its application as required by this Notice.

A. Procedure for Amending the Terms and Conditions of Registration to Avoid Cancellation or Denial of Application

Registrants affected by the cancellation actions set forth in this Notice may avoid cancellation by filing an application for an amended registration which contains the label modifications detailed in Unit IV of this Notice. This application must be filed within 30 days of receipt of this Notice, or within 30 days from publication of this Notice, whichever occurs later. Applicants for a registration subject to this Notice must file an amended application for registration within the applicable 30 day period to avoid denial of the application.

Applications must be submitted to:

By mail:

Mr. Henry Jacoby, Product Manager 21, Registration Division (TS-767C), Office of Pesticide Programs, Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

Office location and telephone number:

Rm. 229, CM #2, 1921 Jefferson Davis Highway, Arlington, VA. (703-557-1900).

B. Procedure for Requesting a Hearing

To contest the regulatory actions (including the provisions governing existing stocks) set forth by this Notice, registrants, and any applicants whose applications have been denied by this Notice, may request a hearing within 30 days of receipt of this Notice, or within 30 days from publication of this Notice, whichever occurs later. Any other person adversely affected by the cancellation action described in this Notice, or any interested person with the concurrence of an applicant whose application for registration has been denied, may request a hearing within 30 days of publication of this Notice in the Federal Register.

All registrants, applicants, and other adversely affected parties who request a hearing must file the request in accordance with the procedures established by FIFRA and the Agency's Rules of Practice Governing Hearings (40 CFR Part 164). These procedures require, among other things, that all requests must identify the specific registration(s) by registration number(s) and the specific use(s) for which a hearing is requested, and that all requests must be received by the Hearing Clerk within the applicable 30-day period. Failure to comply with these requirements will result in denial of the request for a hearing. Requests for a hearing should also be accompanied by objections that are specific for each use of the pesticide product for which a hearing is requested.

Requests for a hearing must be submitted to:

Hearing Clerk (A-110), Environmental Protection Agency, 401 M St., SW., Washington, D.C. 20460.

C. Consequences of Filing or Failing To File a Hearing Request

1. *Consequences of Filing a Timely and Effective Hearing Request.* If a hearing on any action initiated by this Notice is requested in a timely and effective manner, the hearing will be governed by the Agency's Rules of Practice for hearings under FIFRA section 6 (40 CFR Part 164). In the event of a hearing, each cancellation action concerning the specific use or uses of the specific registered product which is the subject of the hearing will not become effective except pursuant to an order of the Administrator at the conclusion of the hearing. Similarly, in the event of a hearing, each denial of registration which is the subject of the hearing will not become effective prior to the final order of the Administrator at the conclusion of the hearing.

The hearing will be limited to the specific uses and specific registrations or applications for which the hearing is requested.

2. *Consequences of Failure To File in a Timely and Effective Manner.* If a hearing concerning the cancellation or denial of registration of a specific wood preservative pesticide product subject to this Notice is not requested by the end of the applicable 30-day period, registration of that product will be cancelled, or the denial will be effective, unless the registrant or applicant files a request for an amended label within the statutory period provided herein. If a registrant wishes to contest the cancellation or required conditions for particular identified uses, but desires to modify the terms and conditions of registration to secure continued registration of one or more of those uses permitted by this Notice, the registrant must file a request to amend his label in accordance with the terms and conditions of registration set forth herein as well as submit the hearing request.

D. Procedures Required for Products Registered Pursuant to 40 CFR 162.17

EPA is aware of a number of pesticide products containing the wood preservatives which are not federally registered and which are being marketed under the authority of 40 CFR 162.17. The Agency hereby notifies all persons producing or distributing such products that they must submit a full application for Federal registration, including all required supporting data as prescribed by the provisions of section 3 of FIFRA, of 40 CFR Part 162, and of P.R. Notice 83-4 and 83-4a, within 30 days of receipt of this Notice or publication in the Federal Register, whichever is later. The Agency further notifies all such applicants that only products which conform with the requirements of this Notice will be registered. Any person who wishes to register a product which would not conform with the requirements of this Notice is informed that this Notice is a denial of his application, and that if he wishes to contest the denial: he must request a hearing within the applicable 30-day period provided by this Notice.

E. Separation of Functions

The Agency's rules of practice forbid anyone who may take part in deciding this case, at any stage of the proceeding, from discussing the merits of the proceeding *ex parte* with any party or with any person who has been connected with the preparation or presentation of the proceeding as an advocate or in any investigative or expert capacity, or with any of their representatives. 40 CFR 164.7.

Accordingly, the following Agency offices, and the staffs thereof, are designated as the judicial staff to perform the judicial function of the Agency in any administrative hearing on this Notice of Intent To Cancel: the office of the Administrative Law Judge, the office of the Judicial Officer, the Deputy Administrator, the members of the staff in the immediate office of the Deputy Administrator, and the members of the staff in the immediate office of the Administrator. Administrator Ruckelshaus has recused himself from all particular matters specifically focused on wood preservatives. None of the persons designated as the judicial staff may have any *ex parte* communication with the trial staff or any other interested person not employed by EPA, on the merits of any of the issues involved in this proceeding, without fully complying with the applicable regulations.

Dated: July 10, 1984.

John A. Moore,

Assistant Administrator for Pesticides and Toxic Substances.

[FR Doc. 84-18068 Filed 7-11-84; 10:32 am]

BILLING CODE 6560-50-M